E MAGAZINE OF BUILDING

a copy
FINE ARTS DEPT.

PUBLIC LIBRARY
JUL 22 1952

July 1952

house + home

edition

Editorial Cheaper houses or better values? (p. 67)

Waste in building Presidential Report urges uniform Federal code and FHA standards (p. 33)

AIA meets Record attendance in record heat endorses public housing (p. 44)

Title insurance cost cut At $5 a thousand it helps homeowners finance improvements with the open-end mortgage (p. 79)

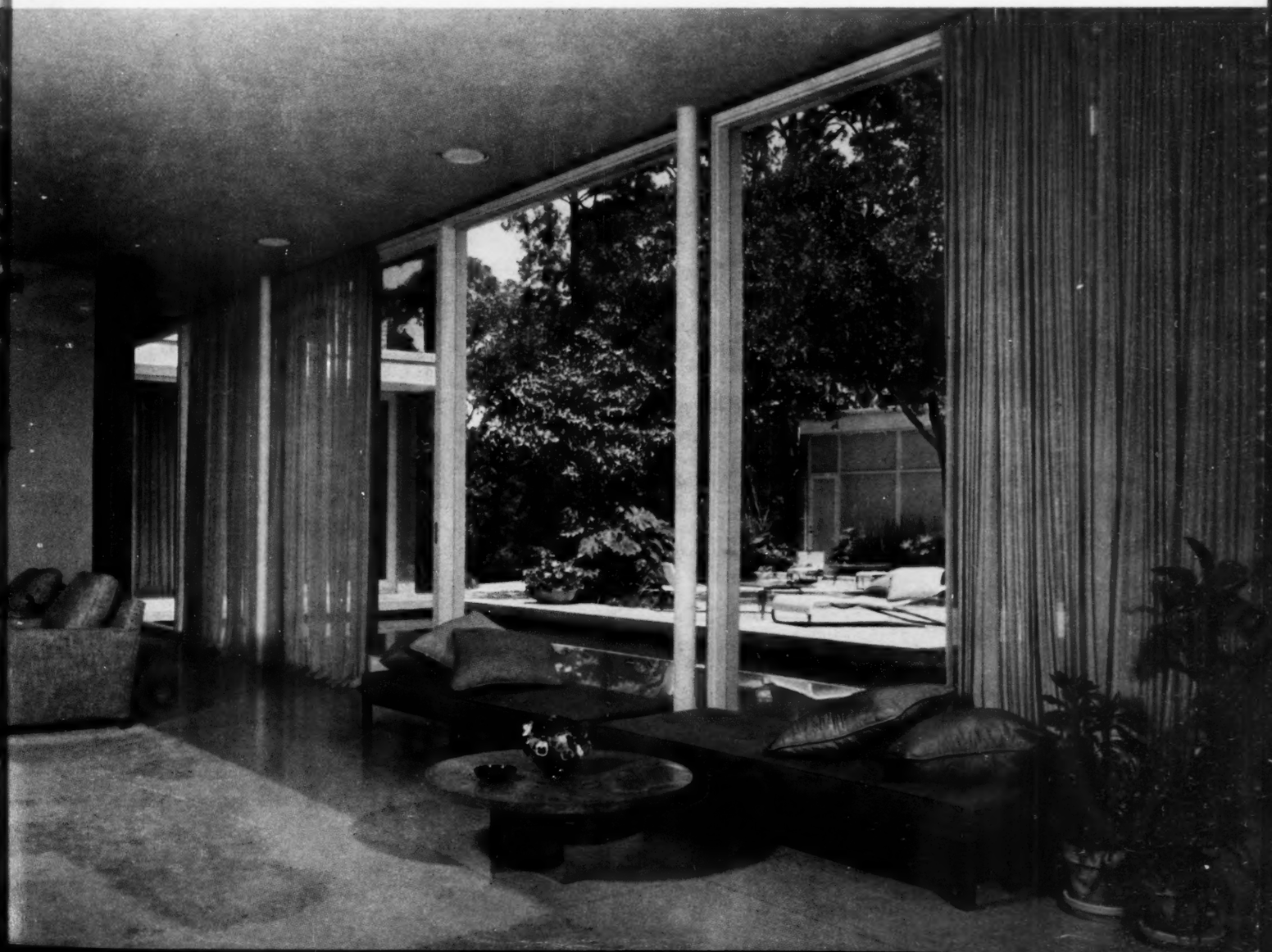
AIA honor house Three-level open plan with bird-cage living porch and three-dimensional flow (p. 74)

Plumbers and plumbing Caustic but constructive comments from Bill Levitt's engineer (p. 96)

The banana split (cont'd) Right and wrong ways to combine varied facade materials (p. 102)

Barn-framed house Big timber system simplifies open planning and window walls (p. 88)

Remodeling Fix up the old or add a new wing? (p. 92)



Even the Lowest-Priced Homes Can Afford . . .

NUTONE
Ventilating Fans

Fresh, Clean Air

. . . to help sell your homes faster!

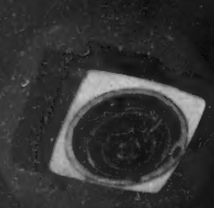
When you add **smartly styled** NuTone Ventilating Fans to your homes, you add SALES APPEAL . . . especially to women! Nutone's national advertising sells them on kitchens **free from grease and odors** . . . cleaner walls, woodwork, and furnishings. Houses sell faster . . . when you include NuTone Ventilating Fans! 23 Models for Bathroom, Kitchen, Recreation Room, Laundry, $24.20 to $36.95 list.

NuTone Ventilating Fans offer you FOUR exclusive features

1. LOW COST INSTALLATION. No loose screws — Only few parts to handle.
2. GREATER AIR DELIVERY. Special Pressure-Type Blade and Venturi Tube.
3. REMOVABLE SNAP-IN MOTOR. Simple, Quick — No Tools Required.
4. GRILLE QUICKLY REMOVABLE. Easily Cleaned! Patented.

FREE Complete details . . . free literature . . . diagrams . . . specifications . . . installation data. MAIL COUPON NOW!

THE MOST COMPLETE LINE OF VENTILATING FANS IN THE INDUSTRY



Model 841
10" CEILING or WALL FAN

Model 811
10" WALL FAN

Model 831
8" CEILING or WALL FAN

Model 801
8" WALL FAN

Model 821
8" VERTICAL DISCHARGE

Models 840 . . 810 . . 830 . . 800 in all white at lower cost . . . 820 without reducer.

Specify All 3 NuTone Products

Install soothing NuTone Door Chimes for a friendly musical greeting at the front door. 15 Models for kitchen, hallway, or living room — $4.25 to $32.75 list.

For a toasty warm Bathroom, install NuTone Heat-A-Lite, the world's safest electric heater — built into the ceiling. 10 Models — $49.95 to $67.95 list.

NuTone, Inc., Dept. HH-7, Cincinnati 27, Ohio

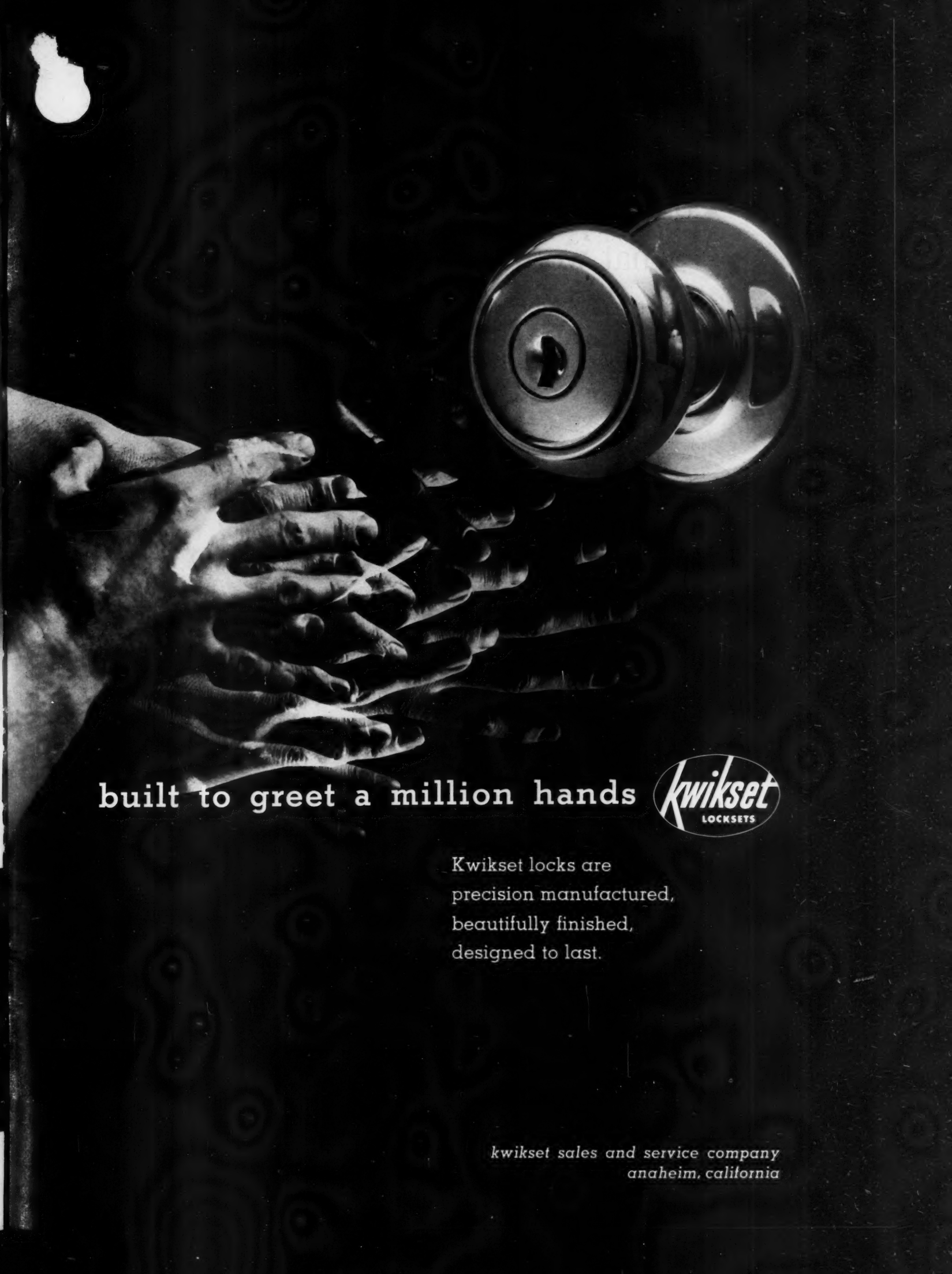
Please send complete details, diagrams, specifications. and data on NuTone Ventilating Fans.

Name _____

Company _____

Address _____

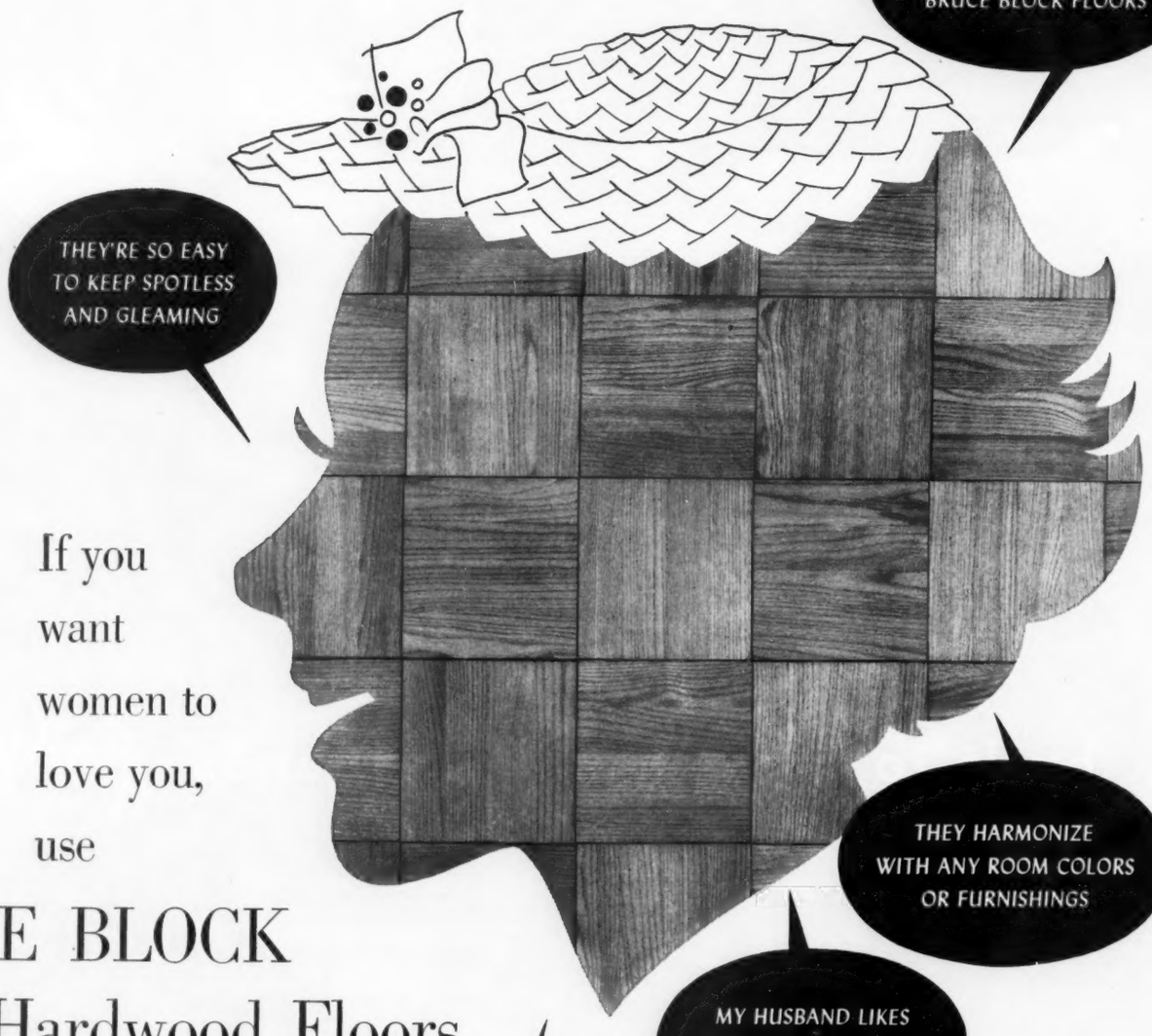
City _____ Zone _____ State _____


built to greet a million hands
kwikset
LOCKSETS
Kwikset locks are
precision manufactured,
beautifully finished,
designed to last.
kwikset sales and service company
anaheim, california

R v.2 July-Dec. 1952

You should hear what women say

ABOUT THEIR BRUCE BLOCK FLOORS


THEY'RE SO MODERN AND DISTINCTIVE
I LOVE THEIR WARM NATURAL BEAUTY
EVERYBODY ADMIRES MY BRUCE BLOCK FLOORS
THEY'RE SO EASY TO KEEP SPOTLESS AND GLEAMING
THEY HARMONIZE WITH ANY ROOM COLORS OR FURNISHINGS
MY HUSBAND LIKES THEM BECAUSE THEY'LL NEVER WEAR OUT
I USE ONLY SMALL SCATTER RUGS . . . TO "SHOW OFF" MY FLOORS

If you want women to love you, use

BRUCE BLOCK Hardwood Floors in your homes

See our catalog in Sweet's.
For literature, write
E. L. BRUCE CO., MEMPHIS 1, TENN.

BRUCE *World's Largest in Hardwood Floors*

FA

THE MAGAZINE OF BUILDING

house+home edition

July, 1952

33 **NEWS**

44 **AIA CONVENTION IN NEW YORK CITY**

54 **LETTERS**

64 **BEHIND THE BLUEPRINTS**

67 **EDITORIAL**—Cheaper houses or better values?

68 Roman house in Texas by Hugo Neuhaus

74 Three-level space in California by Mario Corbett

80 Cheap title insurance clears the way for fuller use of the open-end mortgage

82 A builder's one-man slum clearance in Texas

88 Barn-framed house near Philadelphia by Vincent G. Kling

92 New living space designed by Oscar Stonorov brings an old Pennsylvania farmhouse up-to-date

96 What's wrong with plumbing, by Irwin Jalonack

98 Garden apartments in Minneapolis on a middle-income building budget

102 Advice to the appraiser, second in a series of articles

108 First AEC Wherry Act housing, at Richland, Wash.

112 Newport's rich architectural heritage, a review by Robert Woods Kennedy

116 Flat tops in a Connecticut orchard, Peter Powers Hale's development

120 Small pipe-heating systems

142 **REVIEWS**

154 **PRODUCT NEWS**

178 **TECHNICAL PUBLICATIONS**

Cover: House by Hugo Neuhaus, architect; photo by Ulric Meisel

Published by TIME Incorporated

EDITOR-IN-CHIEF Henry R. Luce
PRESIDENT Roy E. Larsen
EDITORIAL DIRECTOR John Shaw Billings

THE MAGAZINE OF BUILDING
ARCHITECTURAL FORUM Edition
and
THE MAGAZINE OF BUILDING
HOUSE & HOME Edition

EDITOR AND PUBLISHER
P. I. Prentice

EDITORIAL CHAIRMAN
Douglas Haskell, AIA

EXECUTIVE EDITORS
Joseph C. Hazen, Jr.
Suzanne Gleaves

ART DIRECTOR
Paul Grotz

ASSOCIATES: W. C. Bixby, Peter Blake, Gurney Breckenfeld, James P. Gallagher, Jane Jacobs, Mary Jane Lightbown, Walter McQuade, Harry J. Middleton, Carl Norcross, Vernon Read, Richard Saunders (Washington), Ogden Tanner, Warren Unna, Arthur Watkins.

ASSISTANTS: Rosalind Klein Berlin, Marilyn Grayhoff, Henry T. Martin, Alice O'Connor.

ART STAFF: Associate Directors, ARCHITECTURAL FORUM: Amnon Rubinstein, Ray Komai; HOUSE & HOME: Madelaine Thatcher, Nina Rittenberg. Assistants: Martha Blake, Mary Villarejo, Jan V. White.

MARKET RESEARCH DIRECTOR: Arthur S. Goldman.

CONSULTANTS: Miles L. Colean, Ruth Goodhue.

CIRCULATION MANAGER: Walter F. Grueninger.

PRODUCTION MANAGER: Lawrence W. Mester.

GENERAL MANAGER
Robert W. Chasteney, Jr.

ADVERTISING DIRECTOR
George P. Shutt

ADVERTISING MANAGER
Richard N. Jones

THE MAGAZINE OF BUILDING, HOUSE & HOME Edition, is published monthly by TIME Inc., Time & Life Building, 9 Rockefeller Plaza, New York 20, N. Y. Yearly subscription payable in advance. To individuals or firms (and their employes) engaged in building—design, construction, finance, realty; material distribution, production or manufacture; government agencies and supervisory employes; teachers and students of architecture and trade associations connected with the building industry; advertisers and publishers: U.S.A., Possessions and Canada, $5.50; Pan American Union and the Philippines, $9.00; elsewhere, $12.00. To those not connected with the building industry; U.S.A., Possessions, and Canada, $7.00; elsewhere $17.50. Single copies, if available, $1. All copies mailed flat. Copyright under International Copyright Convention. All rights reserved under the Pan American Copyright Convention. Entered as second class matter January 11, 1952 at the Post Office at New York, N. Y. Copyright 1952 by TIME Inc.

TIME Inc. also publishes TIME, LIFE and FORTUNE. Chairman, Maurice T. Moore; President, Roy E. Larsen; Executive Vice President and Treasurer, Charles L. Stillman; Executive Vice President for Publishing, Howard Black; Vice Presidents, Allen Grover, Andrew Heiskell, C. D. Jackson, J. A. Linen, P. I. Prentice; Vice President and Secretary, D. W. Brumbaugh; Comptroller and Assistant Secretary, A. W. Carlson; Manager, MARCH OF TIME Division, A. R. Murphy.

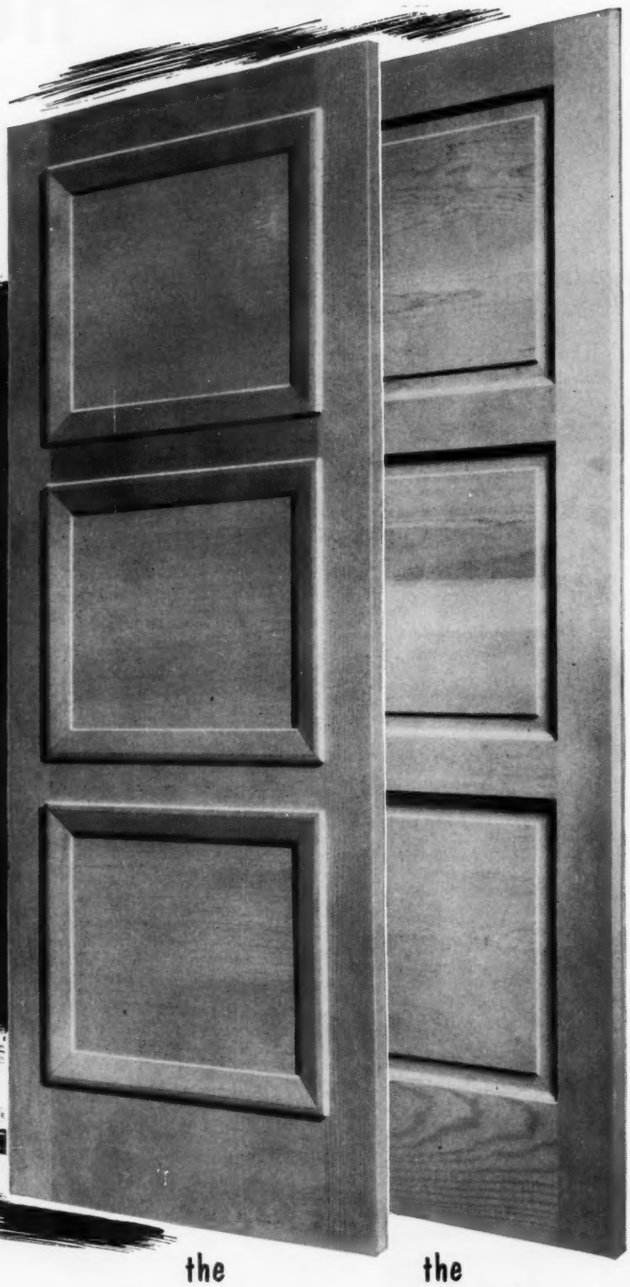
2 BILT-WELL DOORS

FOR CONTEMPORARY AND RANCH TYPE HOMES

OPEN UP...

NEW DOOR SALES POSSIBILITIES

with these beautiful doors designed and built to meet the exacting demands of today's home owners for elegance and lasting, satisfying service.



Nationally advertised Bilt-Well Doors—designed to CREATE new business, quick sales and to realize larger PROFITS!

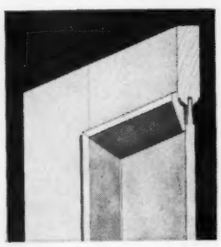
The demand for beautiful doors to fit the homes of today has been constantly increasing. Here are two new doors to meet your customers' demands—doors that are architecturally correct for Contemporary homes . . . doors are made of properly kiln-dried Ponderosa Pine, accurately machined and sturdily constructed.

Write us for literature and name of nearest supplier.

Build Well with BILT-WELL WOOD WORK

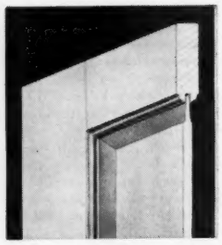
MEMBER Ponderosa Pine Woodwork

the **Hacienda**



Mitered and packaged moulding is available to convert the "Rancho" door to the "Hacienda" door. The moulding is simple to apply around the panels—either on one or both sides of the door.

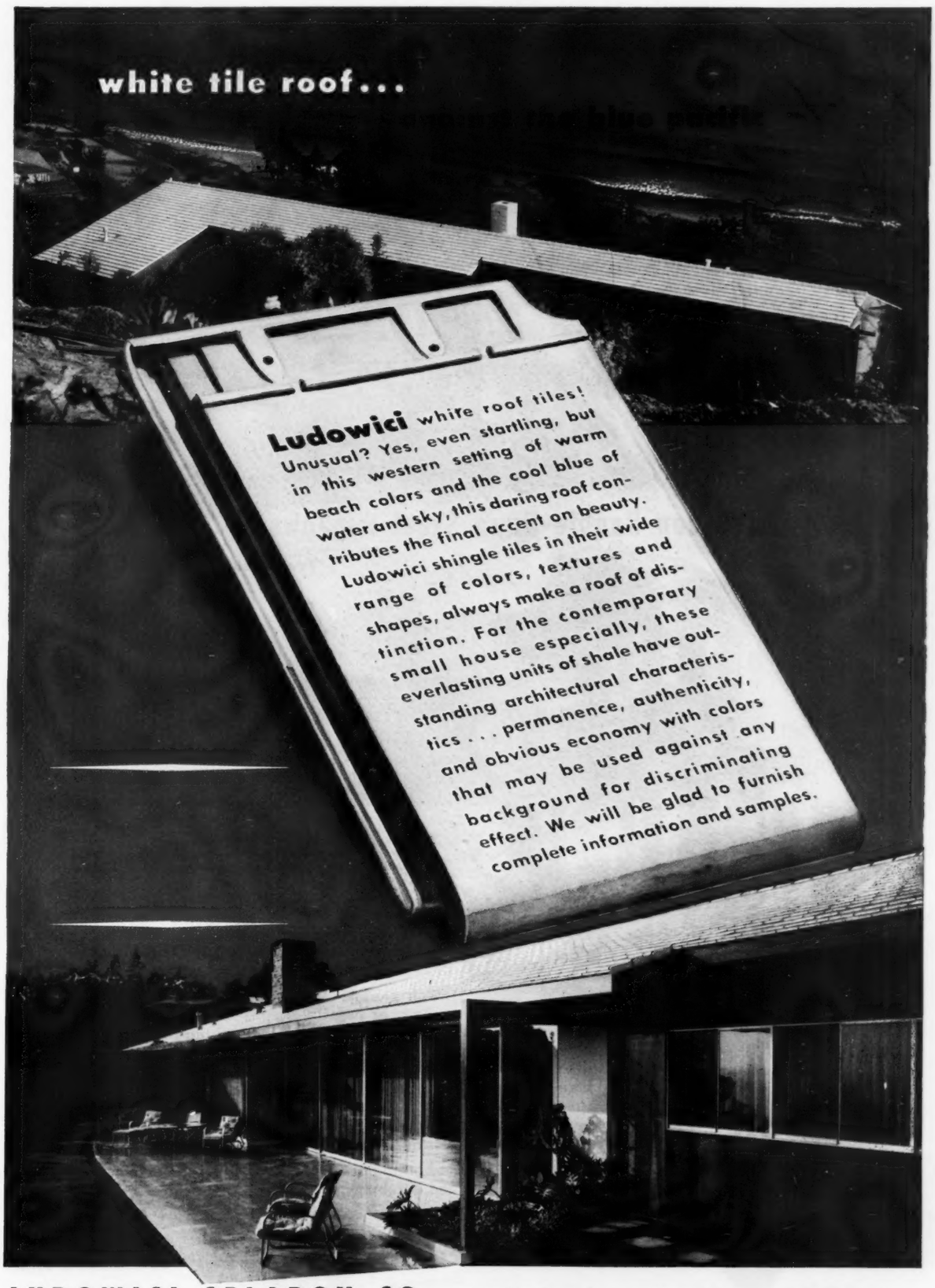
the **Rancho**



A close-up view of the new "Rancho" door (showing top rail and stile, beveled and raised). Heavy (1⅜" thick) solid panels cast a shadow and accentuate the beautiful contour of the door.

CARR, ADAMS & COLLIER, CO. *Dubuque, Iowa*

Here's a list of the Bilt-Well line ● *Superior Unit Wood Windows* ● *Nu-Style & Multiple-Use Cabinets* ● *Carr-dor Garage Doors* ● *Combination Doors* ● *Screens & Storm Sash* ● *Basement Unit Windows* ● *Shutters* ● *Exterior Doors* ● *Interior Doors* ● *Entrances* ● *Louvers & Gable Sash* ● *Corner China Cabinets* ● *Ironing Board Cabinets* ● *Mantels* ● *Telephone Cabinets* ● *Stair Parts*


white tile roof...
Ludowici white roof tiles! Unusual? Yes, even startling, but in this western setting of warm beach colors and the cool blue of water and sky, this daring roof contributes the final accent on beauty. Ludowici shingle tiles in their wide range of colors, textures and shapes, always make a roof of distinction. For the contemporary small house especially, these everlasting units of shale have outstanding architectural characteristics . . . permanence, authenticity, and obvious economy with colors that may be used against any background for discriminating effect. We will be glad to furnish complete information and samples.

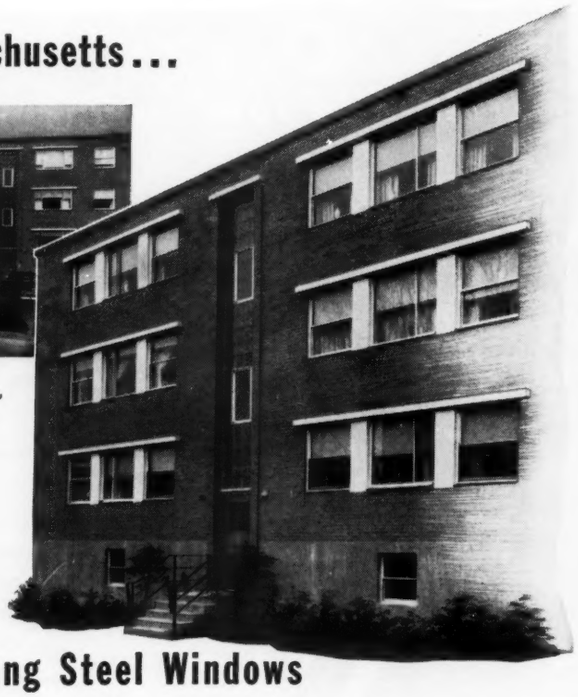
LUDOWICI-CELADON CO.
Suite 1203, 75 East Wacker Drive • Chicago 3, Ill.

New York 17, New York
565 Fifth Avenue

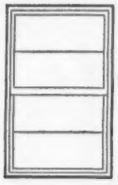
Washington 5, D. C.
740 15th Street, N.W.

Cleveland 20, Ohio
12734 Woodland Avenue

Modern Housing in Massachusetts...



U. S. Veterans Housing, Brookline, Mass.
Carney & Goldberg, Architects. John Bowen Company, Contractors. Truscon Series 138 Double-Hung Steel Windows, Truscon Intermediate Steel Casements and Metal Casings.



beautiful with

Truscon Double-Hung Steel Windows

Series 138

Andover Housing Project, Andover, Mass.
Clinton Foster Goodwin, Architect. Benoit Construction Co., Contractors. Truscon Series 138 Double-Hung Steel Windows.

Truscon Series 138 Double-Hung Steel Windows are instruments of great beauty, utility and economy in housing construction.

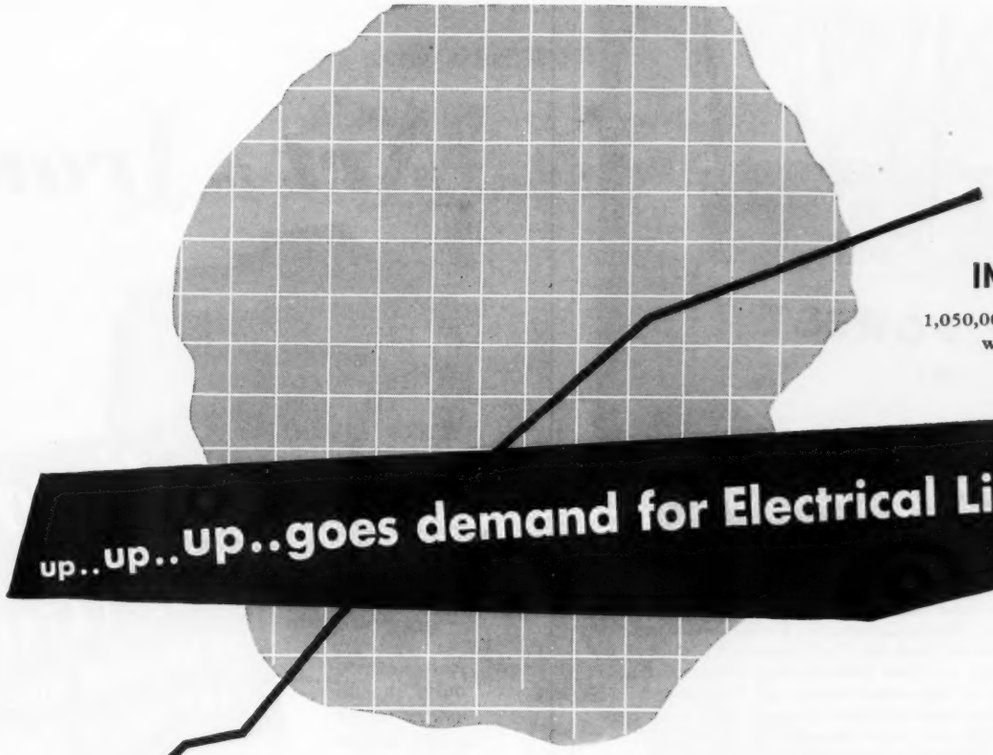
Truscon Double-Hung Steel Windows are available in a wide range of muntin designs . . . modern or colonial . . . to harmonize with any type of architectural motif. The sash members are of welded tubular construction. Hardware is of solid bronze. Operation is controlled by motor type spring balances equipped with tapes of stainless steel. Quiet, positive action and long trouble-free life are assured. Each window is completely factory weatherstripped in stainless steel. Screening is easily and attractively accomplished through the inclusion of a rebate on the exterior of the window frame, which permits flush installation of screens and combination screen and storm sash units.

For single structures or great housing projects in any geographical location, investigate the beauty, economy and durability of Truscon Double-Hung Steel Windows. See SWEET'S for details, and write for literature describing the entire line of Truscon Steel Building Products.

TRUSCON MARK OF MERIT PRODUCTS

TRUSCON® STEEL COMPANY 1056 ALBERT STREET, YOUNGSTOWN 1, OHIO
Subsidiary of Republic Steel Corporation

TRUSCON a name you can build on



IN 1951

1,050,000 Home Freezers were bought

up..up..up..goes demand for Electrical Living!

IN 1946

210,000 Home Freezers were bought

Why is this tremendous demand for electrical equipment important to you?

Houses that are *planned electrically* for these modern conveniences have maximum sales appeal. They give you powerful selling advantages.

Westinghouse has developed basic design data to help you plan for most advantageous use of space. The Westinghouse line of equipment helps you meet market conditions, while adding "proof of quality" that is widely accepted.

A file of electrical planning material is available for the asking. To get a set, send the coupon below.

Westinghouse Products for Better Electrical Living

Frost-Free® Refrigerators
Speed-Electric Ranges
WashWell® Dishwashers
Waste-Away® Food Waste Disposer
Poweraire® Ventilating Fan
Home Freezer
Decorative Micarta® Counter Tops
Laundromat® Automatic Washers
Electric Clothes Dryers
Electric Water Heaters
Electric Wall Heaters
Bryant Wiring Devices
Quicklag® Circuit Breakers
Precipitron® Air Cleaner
Unitaire® Air Conditioners
Electric Dehumidifier
Westinghouse Lamps
Westinghouse Television and Radio

YOU CAN BE SURE...IF IT'S

Westinghouse

Better Homes Bureau, Dept. HH-7
Westinghouse Electric Corporation
P. O. Box 868, Pittsburgh 30, Pa.

Please send me free booklets on Electrical Planning.

Name_____

Company_____

Street_____

City_____ Zone____ State_____

G-10233

All of the frame homes in the nationally-known Park Forest, Illinois Community Development are equipped with Dura-seal Combination Metal Weatherstrip and Sash Balance. And this important visual feature helps these homes sell themselves!

With Dura-seal, windows open and close easily and smoothly with *finger-tip control*. Four spring balances (enclosed in metal housings) are used in each window to assure true balance. Dura-seal's *complete* weatherstripping saves 20% to 40% in fuel and prevents drafts and dirt from entering. It is cut to the pitch of the sill—providing an attractive and efficient window. It is self-adjusting and assures trouble-free operation for the life of the building!

These are a few of the reasons why Dura-seal is a favorite with thousands of builders and architects. Be sure to look into Dura-seal *now* . . . see our folder in Sweet's File!

ZEGERS Incorporated
8090 South Chicago Avenue, Chicago 17, Illinois

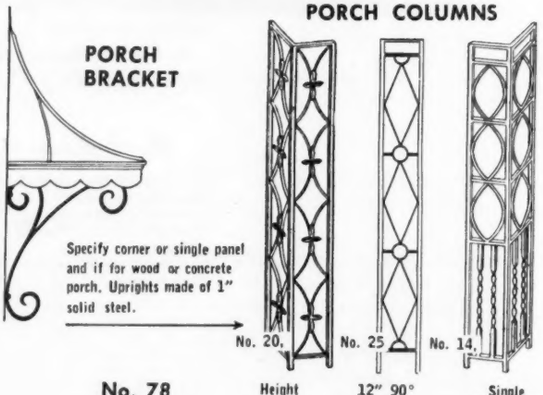
ZEGERS
Dura-seal
Combination
Metal Weatherstrip
Sash Balance
Dura-seal's one piece jamb member has a concave back surface, providing a desirable flexibility which maintains a constant air seal and smooth window operation even when the sash expands or contracts due to changeable atmospheric conditions.

Aerial view showing northeastern part of Park Forest, a project of American Community Builders, Inc., Philip M. Klutznick, president and Nathan Manilow, vice-president and treasurer

Art in Iron

just out! NEW 1952 CATALOG SEND FOR YOUR FREE COPY today

Artcraft produces the finest, most exacting custom-made ornamental iron work, and regular low-priced stock work at amazingly low cost. There's no assembling on the job, because Artcraft's finished products come to you completely packaged to measurements. Saves costly labor time. ARTCRAFT'S CUSTOM WORK PRICES COMPARE WITH COMPETITIVE STOCK ITEM PRICES! **ORDER THESE STOCK ITEMS NOW IMMEDIATE DELIVERY**


PORCH COLUMNS
PORCH BRACKET
Specify corner or single panel and if for wood or concrete porch. Uprights made of 1" solid steel.
No. 20
No. 25
No. 14

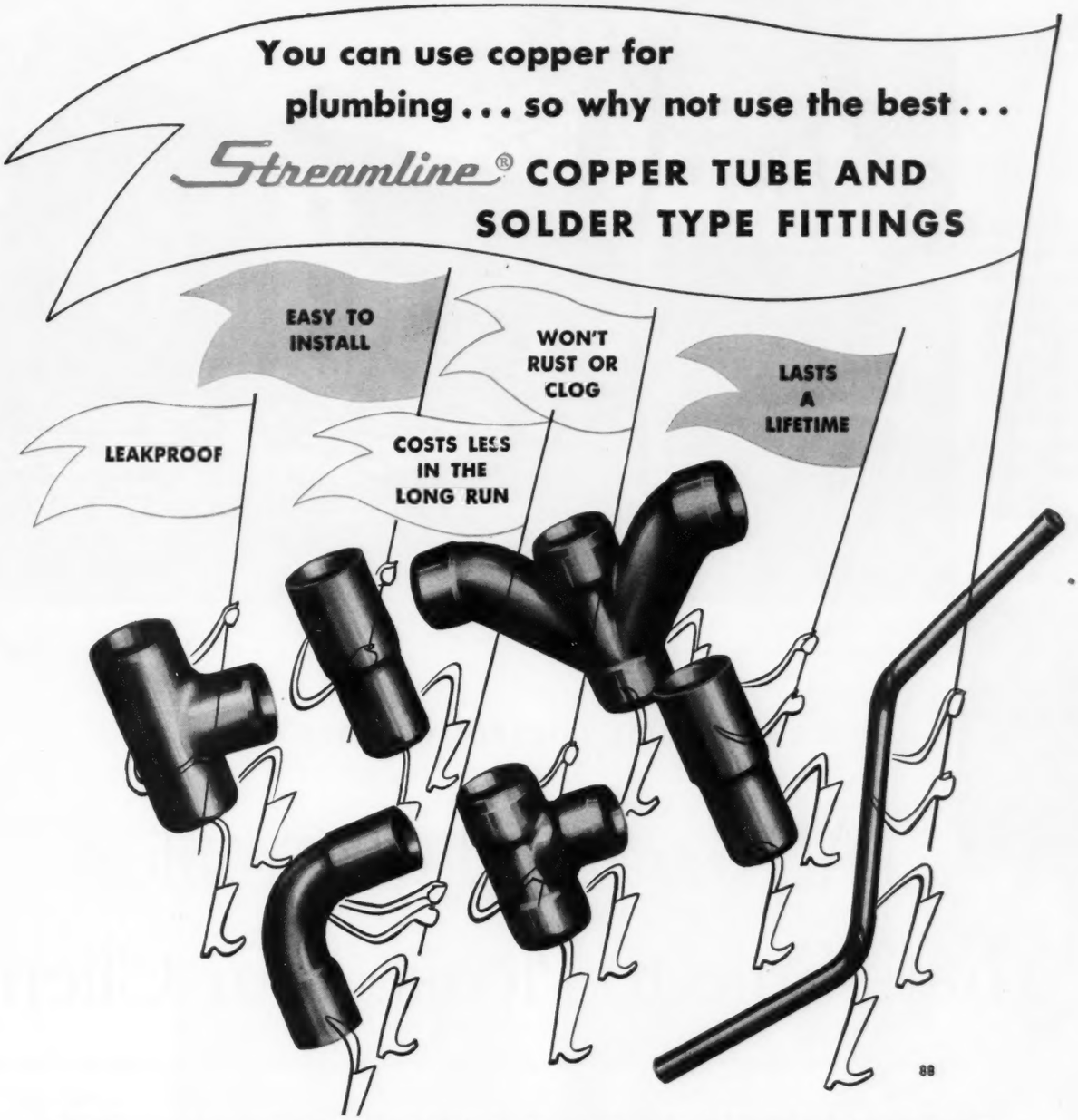
No. 78		Height	12" 90° corners	Single 12" panels
20" x 20"	$7.50 pr.	7'0"	$28 each	$17 each
30" x 30"	$12.00 pr.	7'6"	$30 each	$18 each
		8'0"	$32 each	$19 each

Send in your specifications for custom work. Your design will be carefully and expertly carried out with the most exacting detail. Three weeks delivery.

ARTCRAFT ORNAMENTAL IRON CO.
730 E. Hudson Avenue
Columbus 11, Ohio

You can use copper for plumbing . . . so why not use the best . . .

Streamline® COPPER TUBE AND SOLDER TYPE FITTINGS



Yes, you *can* use copper for both domestic hot and cold water lines and underground service lines. So, when you give your customers copper, install the best . . . STREAMLINE copper tube and solder type fittings.

Here's why it pays to use STREAMLINE copper tube and solder type fittings:

- They save installation time and money because both tube and fittings are precision machined for perfect fit.
- Uniform solder cup depths simplify roughing-in.
- Lighter and easier to handle . . . tube can be readily snaked around obstructions.
- It's permanent—can't rust, won't clog and lasts more than a lifetime.

Architects, Plumbers, Builders and Home-owners all agree on the permanence, the economy and the common sense of an all-copper plumbing system.

IT PAYS TO USE COPPER FOR PLUMBING AND HEATING . . . WHY NOT USE THE BEST—STREAMLINE COPPER TUBE AND SOLDER TYPE FITTINGS.

STREAMLINE copper tube is available in 20 ft. straight lengths and 60 ft. coils. See your jobber for further information or write today for catalog S-352 and details concerning present government regulations on the use of copper.

MUELLER BRASS CO. STREAMLINE PRODUCTS

MUELLER BRASS CO. PORT HURON 29, MICHIGAN

The need for zone control is clearly shown in this photograph of the exterior. With this expanse of glass, the solar effect of a bright winter sun could quickly make southern parts of the house uncomfortably warm—if it weren't for Honeywell Zone Control.

HONEYWELL ZONE CONTROL CREATES

A New Kind of Comfort That's Sure to Please Your Clients

Now you can give them the exact temperature they want—in every room—by specifying Honeywell Zone Control

The handsome new home of Mr. and Mrs. Kenneth E. Sutton in Apponaug, Rhode Island, is a superb example of how large glass areas can give a feeling of spaciousness to the average size modern home.

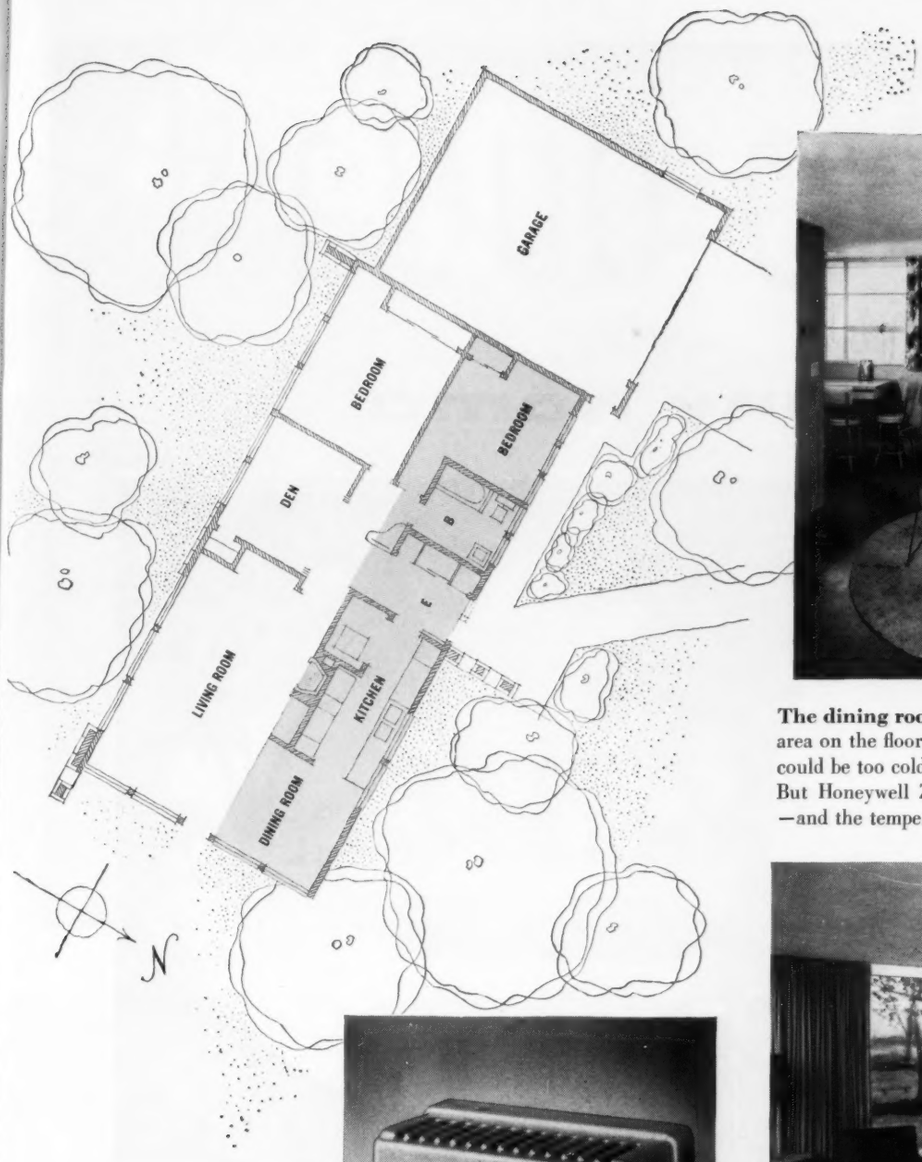
And it's a superb example, too, of how Honeywell Zone Control can help you give clients comfortable, even warmth—*in every part of the house*—all winter long.

In developing the floor plan, Knight Dexter Robinson, designer with the architectural firm of Cull and Robinson, realized no ordinary temperature control system would do.

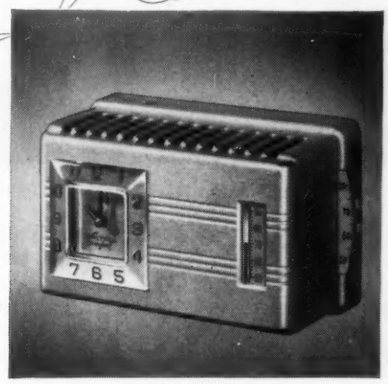
"*The large glass areas and the length of both the north and south outside walls definitely called for zone control,*" *he says.* "*So I divided the house into a north area and a south area—and gave each its own thermostat system.*"

Today, because of Honeywell Zone Control, Mr. and Mrs. Sutton and their guests enjoy the right degree of even warmth—in every part of the house—no matter how changeable the winter weather.

So why don't you specify Honeywell Zone Control for your homes? When you do, you'll be giving your clients the kind of comfort they'll want and need.



The dining room is located in the north heating zone (shaded area on the floor plan). Even on a sunny winter day this room could be too cold—if there was any wind at all from the north. But Honeywell Zone Control guards against such a condition—and the temperature in the dining room is always just right.



HONEYWELL
CLOCK
THERMOSTAT

In the living room (southern heating zone) you get the true feel of spaciousness that's so much a part of the Sutton home. And from the large southern "wall of glass" you also get an idea of how rapidly the heating load can change when it's sunny one minute and cloudy the next. But with Honeywell Zone Control on the job the Suttons' comfort remains constant.

Owners say the Honeywell electric or electronic clock thermostat is wonderful because it turns *down* the heat—automatically—when they go to bed, and gives them a nice cool room to sleep in; turns *up* the heat—automatically—while they're still asleep, and their home is warm when they get up. Saves them fuel, besides! Learn how the Honeywell Clock Thermostat is ideally designed for use with Zone Control Systems. Call your local Honeywell office—there are 91, in key cities across the nation. Or send the coupon at right.

MINNEAPOLIS
Honeywell

First in Controls

H
HONEYWELL

MINNEAPOLIS-HONEYWELL REGULATOR CO.
Dept. HH-7-154, Minneapolis 8, Minnesota

Gentlemen: Please send me additional information on Honeywell Zone Control and the Honeywell Clock Thermostat.

Name_____

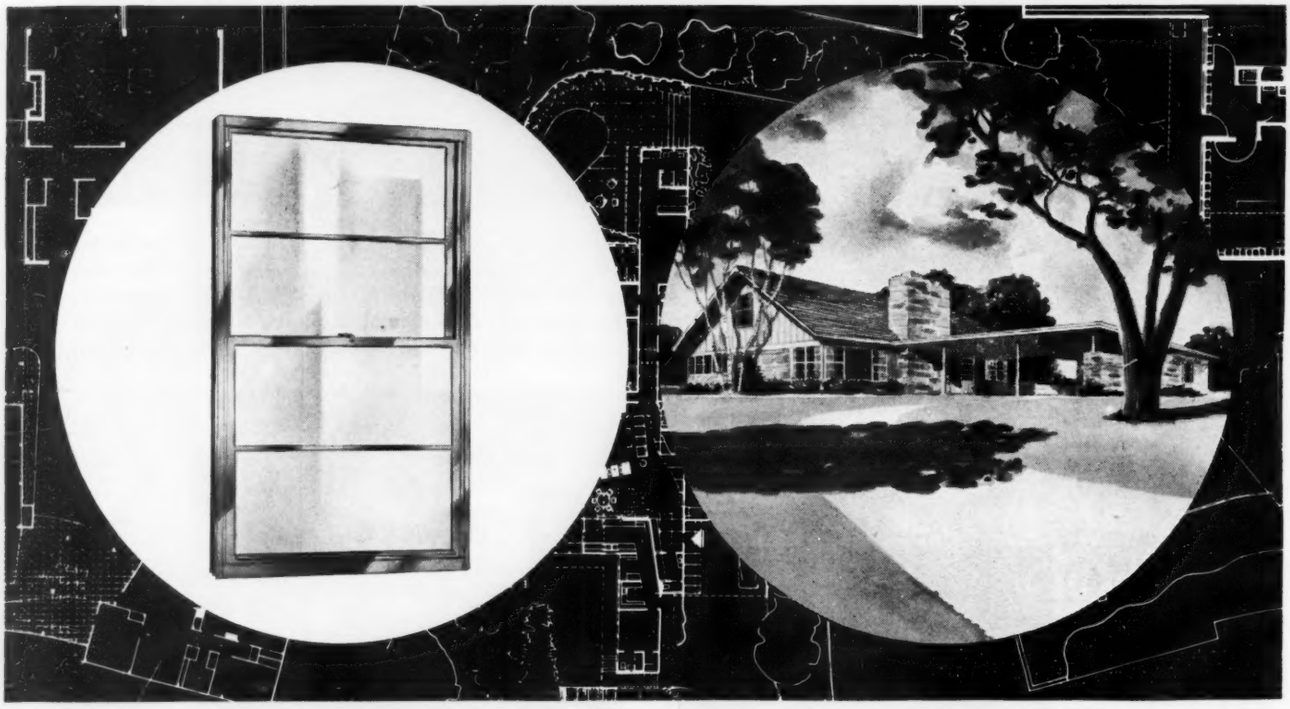
Firm Name _____

Address_____

City_____ Zone____ State_____

made to outlast

...any home



Ceco-Sterling **Double-Hung**
Aluminum Window, series 50-B

In times like these it's just good business to take a second long look when selecting windows for the homes you build. • Cost of course is a factor, but the WAY cost is figured is the important thing. • How long will the windows last? What about maintenance? Those two questions are keys to better buying and here Ceco-Sterling Aluminum Double-Hung Windows win on both counts. • You can be sure they will outlast any home. Engineered with exacting care, and made of ageless aluminum, they give rugged lifetime service . . . won't rust, rot, warp, or swell. They resist climatic change . . . provide the tightest weather seal ever. • When it comes to maintenance Ceco-Sterling Aluminum Windows deliver a plus value. No painting is necessary and cleaning is a mere matter of wiping. There are other advantages too, such as easy installation . . . simplified anchorage . . . smart styling . . . with a look of the future . . . and they last and last. • We like to sum it all up this way . . . when you use Ceco-Sterling Aluminum Windows you know you use the very best, you're sure of savings too.

Ceco Steel Products Corporation • General Offices: 5601 W. 26th St., Chicago 50, Illinois • Offices, warehouses and fabricating plants in principal cities

In construction products **CECO ENGINEERING** *makes the big difference*

Daylighting Dilemma?

GO OVERHEAD WITH WASCOLITE SKYDOMES

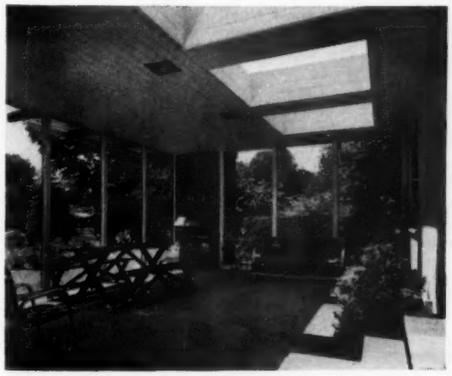
In adding an outdoor living room to the English stucco residence of Mr. & Mrs. Henry Von Kohorn, Scarsdale, N.Y., architect Joseph Douglas Weiss of New York City was faced with these daylighting problems:

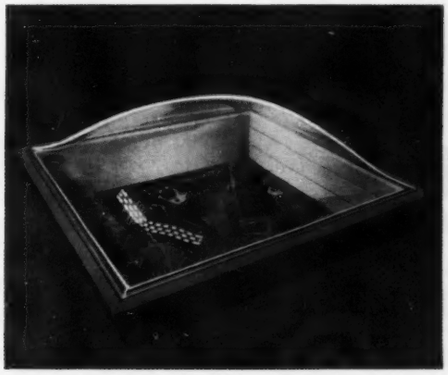
(1) How to pour daylight on the interior areas — especially the garden planted in the flagstone floor along the inner wall.

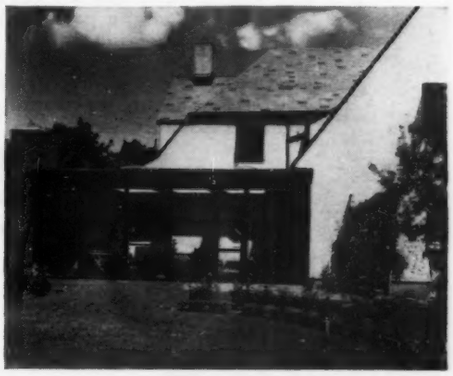
(2) How to transmit adequate daylight to the adjacent living room through its windows despite the new porch overhang.

Solution: three 64" x 76" clear colorless Wascolite Skydomes installed in the porch ceiling near the living room wall.

Whether you are adding on to present facilities or planning a new structure, daylighting objectives are easier to reach when you go overhead with Skydomes. Wanted design features become simple to attain: *daylight with privacy . . . wall space increased by eliminating windows . . . service area kept inside, periphery reserved for living space* . . . and many more. Write for information today. Wasco Flashing Co., 88 Fawcett St., Cambridge 38, Mass.







WASCOLITE® PATENT PENDING **SKYDOMES**

ANOTHER CASE OF *Copper* WHERE IT COUNTS

Designers, architects, contractors and builders tell us that in many cases there simply is no adequate substitute for copper. As a result they are using what copper they can get where it counts most. One of those places is in hot and cold water lines in homes like the one shown. This installation required 90′ of ¾″ and 160′ of ½″ Revere Copper Water Tube, Type L. This National Award Winning Home was built by Jere Strizek. Designer was John W. Davis, both of Sacramento, Cal. There are more than 100 similar homes in the Town & Country area where this house was built. Plumbing contractor for 31 of the homes (all of which contain Revere Copper Water Tube) was Beckes & Anderson, Carmichael, Cal.

Next time you build, plan, specify or install, make sure Revere Copper is used in the spots where enduring performance counts most. The architects, builders and contractors who do have found it pays dividends in prestige, reputation and customer satisfaction.

See your Revere Distributor. He will advise you of the availability of materials and, in the event you wish to discuss your technical problems, put you in touch with Revere's Technical Advisory Service.

REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

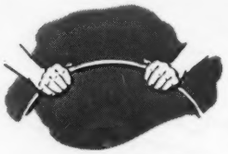
230 Park Avenue, New York 17, N. Y.

Mills: Baltimore, Md.; Chicago and Clinton, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y. Sales Offices in Principal Cities, Distributors Everywhere.

SEE REVERE'S "MEET THE PRESS" ON N.B.C. TELEVISION EVERY SUNDAY

WHY REVERE COPPER WATER TUBE IS PREFERRED BY—

Architects, Builders, Plumbing & Heating Contractors



EASY TO BEND

Saves Time

Revere Copper Water Tube is easy to bend. Soft temper can be bent by hand. Hard temper by hand bending tools.

HANDY LENGTHS

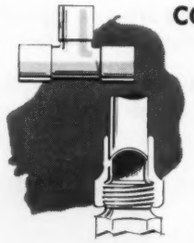
Save Fittings . . . Labor

Revere Copper Water Tube comes in straight lengths of 20′ in hard and soft tempers. 60′ coils of soft temper reduce the number of fittings needed.

SOLDER OR COMPRESSION FITTINGS

Need Less Work Room . . . Save Metal

No worry about wrench room when you use Revere Copper Water Tube with solder fittings. Compression fittings can also be used. No threading is necessary with either type fitting. Wall thickness of tube used can thus be less than for threaded pipe.



NON-RUSTING

Rustable pipe eventually clogs as shown in drawing at top right. Non-rustable Revere Copper Water Tube suffers no loss of flow or pressure as shown at bottom right. No allowance in pipe size need be made for rust accumulation with Revere Copper Water Tube.

Thomas Talley
Architect

a Family Affair

THE ALL-ALUMINUM MIAMI AWNING WINDOW

Major elements in modern home planning are the introduction of wider glass areas and added ventilation features...these are part of Miami Window's basic design...part of the American Family's swing toward light and fresh air.

• Constructed from extra-heavy aluminum alloy sections (63-ST5) • Windows can be made to any dimensions up to 6'2" wide and to any height – gothic and circular heads may be specified • Wide glass vents give awning protection against rain...windows may remain open 24 hours a day, allowing fresh air in and keeping rain out • Positive weathertight construction through triple metal contact and concealed weatherstripping.

For further information, see Sweet's Architectural File 17A/Mi
or – Write, wire or phone, Miami Window Corp., Dept. HH-7

MIAMI WINDOW CORPORATION

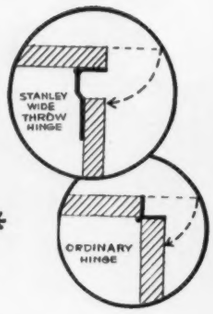
5200 N.W. 37th Avenue, Miami 42, Florida

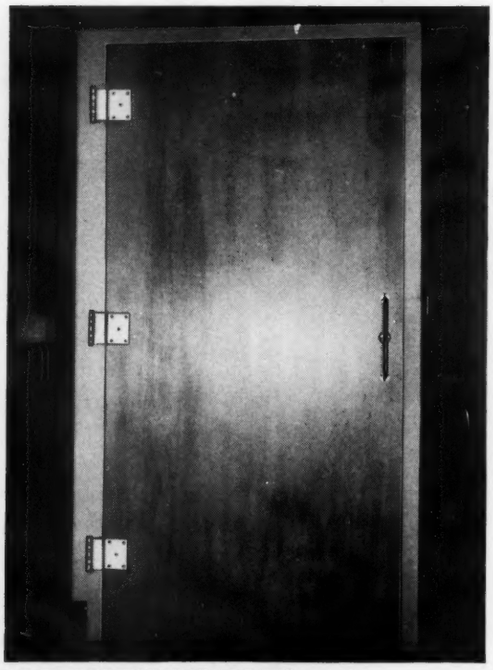
Air Infiltration Tests Taken by Pittsburgh Testing Laboratories

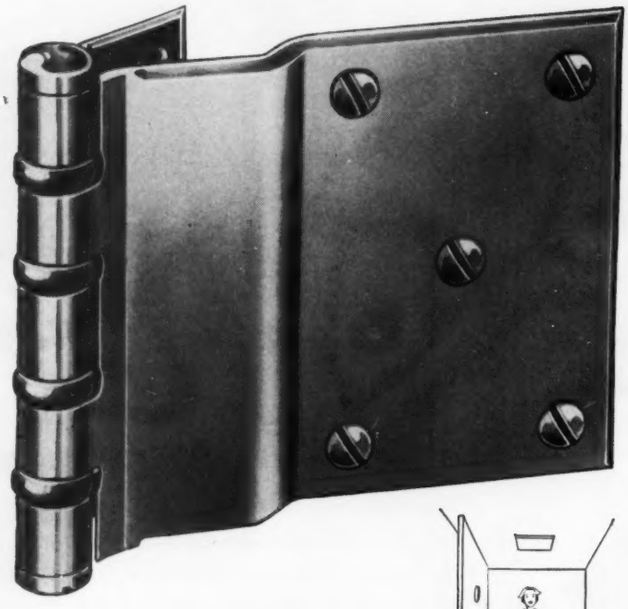
MIAMI *Awning* WINDOW

New "Wide Throw" STANLEY Full-Jeweled* HINGE

BB266







As applied at Mt. Zion Hospital

swings door completely clear of opening at 90° . . . makes moving easier . . . reduces damage to doors

When hospital doors are equipped with "wide throw" hinges, beds and stretchers can be moved in or out easily. This new Stanley Full-Jeweled* Hinge permits the door to clear entrance completely when open at a 90° angle.

You can reduce the widths of your door openings a full 2" by specifying Stanley "wide throw" hinges, since the entire opening is available for use. What's more, it is practically impossible to *wear out* a Full-Jeweled Ball Bearing Hinge. It's designed to take *lateral* as well as *vertical* wear.

"Wide throw" hinges are surface applied; no mortising necessary. Specify BB266 for plated finishes, BB126P for painting.

For extra heavy service, in industrial, commercial or institutional buildings, Stanley Full-Jeweled Ball Bearing Butt Hinges, either wide-throw or standard, will outlast the building.

Reg. U.S. Pat. Off.

The most famous doors in the world swing on Stanley Hinges

The Stanley Works, New Britain, Conn.

STANLEY

Reg. U.S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS
STEEL STRAPPING • STEEL

Unsurpassed for CEILING or FLOOR!

GM RADIANT HEATING tubing

Complete serpentine coil is easily formed in heating contractor's shop . . . or on the building site . . . and readily transported and positioned.

Whether your radiant heating specifications call for ceiling or floor installation, you'll welcome the time, labor and money-saving advantages of GM Steel Tubing. Compare . . . and you'll find *only GM Radiant Heating Tubing* offers all this:

▶ **LOW MATERIAL COST**—yet meets the strict requirements for radiant heating. GM Steel Tubing is *all steel*—no secondary bonding alloys to encourage electrolytic corrosion.

▶ **LOW HANDLING COST.** 120′ to 1000′ continuous coils *eliminate fittings and joints* in plaster and under grade—reduce labor costs and, at the same time, lessen chance of leakage.

▶ **HIGH QUALITY, STRENGTH and UNIFORMITY.** Every foot of GM Steel Tubing is hydrostatically tested at 2000 pounds per square inch. In addition, a section of each coil is subjected to "destructive" tests such as flaring, twisting, flattening, etc. Such tests assure you of quality and uniformity.

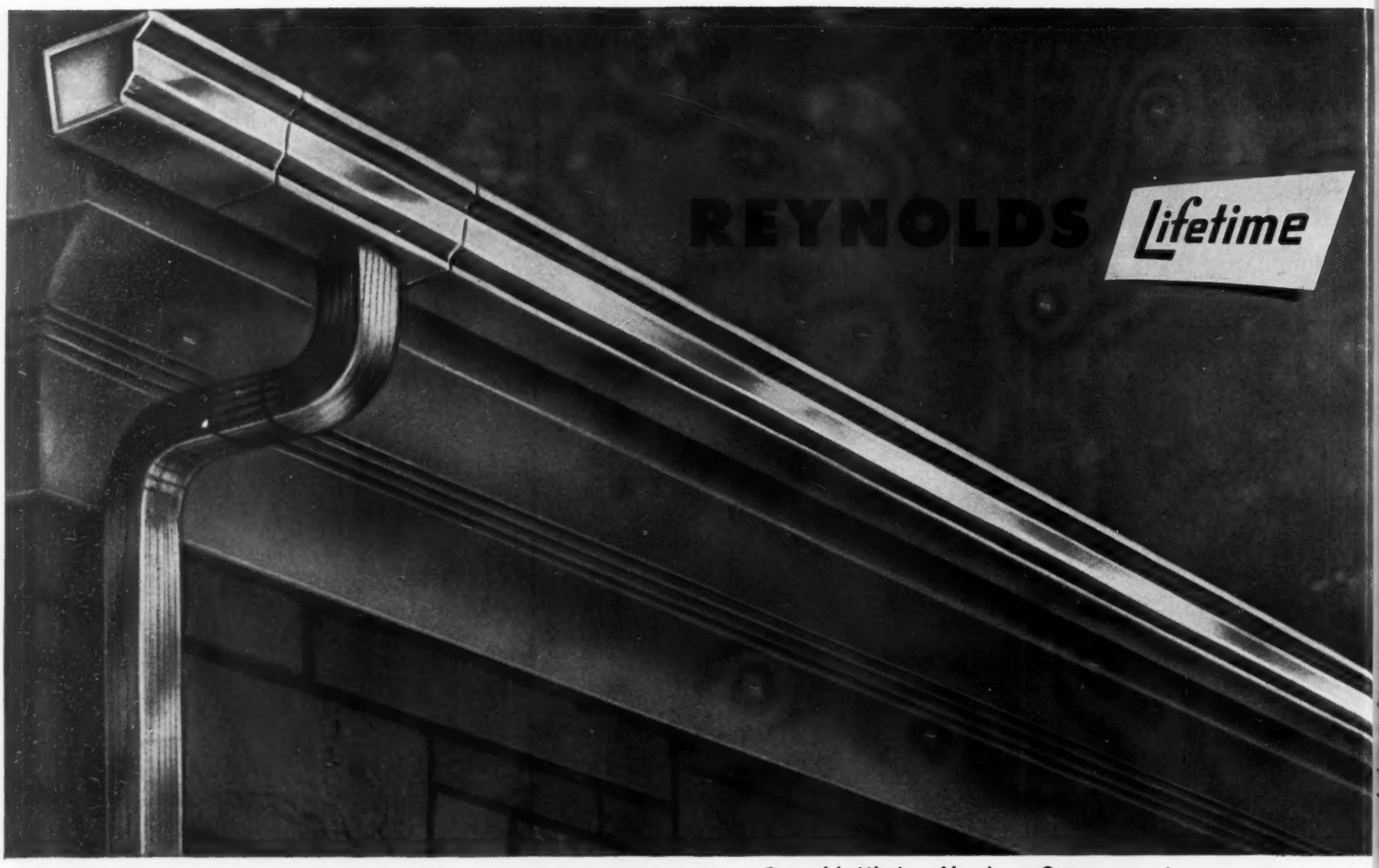
▶ **SMALL, YET TOUGH.** GM Steel Tubing is small enough for easy handling, yet tough enough to be walked on or roughly handled without damage. Available in ½″ and ⅝″ O.D., and, on the recommendations of FHA, in a wall thickness of .042.

ROCHESTER PRODUCTS
DIVISION OF GENERAL MOTORS, Rochester, N. Y., U.S.A.

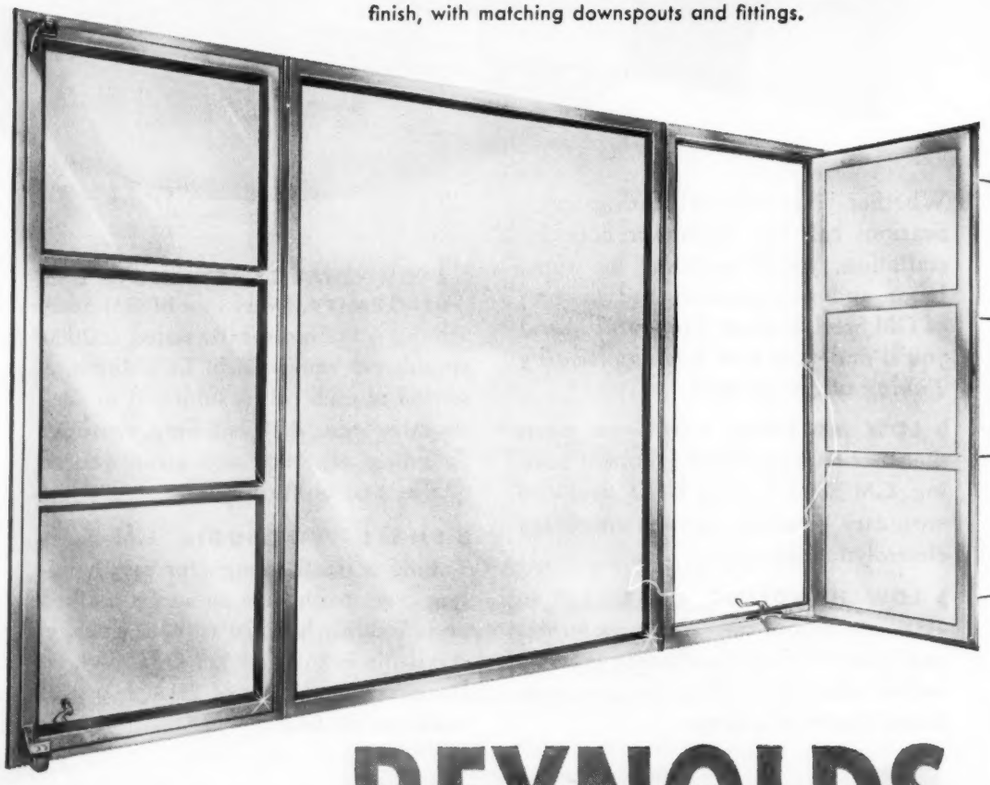
FREE! SPECIAL RADIANT HEATING BROCHURE

Entitled *"A New Approach to Radiant Heating,"* this profusely illustrated Rochester Products brochure tells why GM Steel Tubing is the choice of more and more progressive builders. Send today for your free copy.

DETROIT PUBLIC LIBRARY



Reynolds *Lifetime* Aluminum Gutters come in ogee and half-round styles, smooth and stipple-embossed finish, with matching downspouts and fittings.



Reynolds Aluminum Windows
A complete line of residential windows. Casement, Fixed and Picture Windows; Awning Windows; Double-Hung Windows. Write for Reynolds Aluminum Windows catalog showing all types and sizes.

REYNOLDS

The farthest projection of
Beauty and **Performance...**

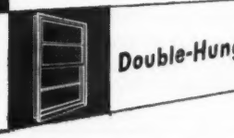
ALUMINUM BUILDING PRODUCTS

The fine lines of **Reynolds** *Lifetime* **Aluminum Gutters** are attractive in themselves. But even more important is the protection of their beauty and performance through the years... rustproof, stain-free, never needing to be painted... and economical, costing much less than any other rustproof metal, saving still further by slip-joint installation. **Reynolds Aluminum Windows** carry to a new height the acknowledged advantages of aluminum in this field... maintenance-free beauty, trouble-free performance. Made of Reynolds own extruded shapes, they have flash-welded corners for greater rigidity and weathertightness. Their satin finish is outstanding.

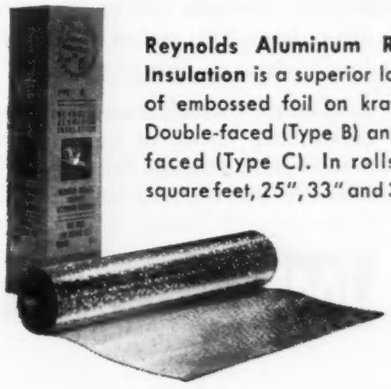
Besides these visible enhancements of a home, you will want the invisible but potent magic of **Reynolds Aluminum Reflective Insulation** ... for high efficiency without bulk, combined with perfect vapor barrier. Aluminum belongs in your building plans... including **Reynolds** *Lifetime* **Aluminum Flashing** on the roof. Write for literature. **Reynolds Metals Company,** Building Products Division, 2019 South Third Street, Louisville 1, Kentucky.

Military demands for aluminum limit supply of these products, but Reynolds is rapidly expanding aluminum capacity. Keep checking your supply source.

World's Largest Producer of Aluminum Building Products



REYNOLDS METALS



Reynolds Aluminum Reflective Insulation is a superior lamination of embossed foil on kraft paper. Double-faced (Type B) and Single-faced (Type C). In rolls of 250 square feet, 25", 33" and 36" wide.

ALUMINUM

In Beautiful Colors that last

Johns-Manville *Smoothgrain!*

The smooth-surfaced asbestos siding with deeply embedded ceramic granule texture and color

J-M Smoothgrain Asbestos Siding is fireproof, rotproof, weatherproof and never needs paint to preserve it.

VIEWED FROM ANY ANGLE, J-M Smoothgrain Asbestos Siding has a strikingly "grained" texture, yet the surface is actually smooth.

This smooth surface resists soiling because it has no grooves to catch dirt. The rich "grained" texture and lasting colors are achieved by colored ceramic granules deeply embedded in the asbestos-cement. And this "graining" is so striking, it is hard for the eye to distinguish the vertical joints.

Smoothgrain Asbestos Siding has the same cross-section throughout. This makes it stronger, easier to cut sharp edges without chipping.

Send for the free full-color brochure that shows the outstanding variety of beautiful colors in which Smoothgrain Asbestos Siding is made. Write Johns-Manville, Box 60, New York 16, N. Y.

JOHNS-MANVILLE PRODUCTS **Johns-Manville**

Smooth surface . . . no grooves . . . yet beautifully "grained"!

LINE YOUR LEVEL against the surface of the new J-M SMOOTHGRAIN Siding . . . you'll find it smooth and true. Look at its beauty from any angle . . . you'll see a rich texture of striking character!

Ask about the new pastel colors that provide "Springtime beauty the year 'round"— Suntan, Coral, Pastel Green!

BRIXMENT ASSURES A GOOD BOND

After all is said and done, the first function of a mortar is to form a good, tight *bond* with the brick. Upon this characteristic depend both the strength and the water-tightness of the wall. A good bond is particularly important in securing water-tight walls, because most cases of leakage are caused by the passage of water *between* the brick and the mortar.

Brixment mortar assures a good, strong, *thorough* bond because: (1) Its great plasticity permits a more complete bedding of the brick, and an increased area of contact between the brick and mortar.

(2) Its high water-retaining capacity keeps the brick from sucking the water out of the mortar too fast, and prevents the mortar from congealing before the brick is thoroughly bedded and bonded.

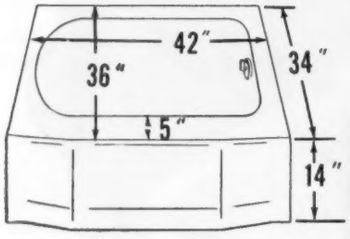
(3)It hardens slowly enough to permit deeper penetration and more thorough keying into the pores of the brick.

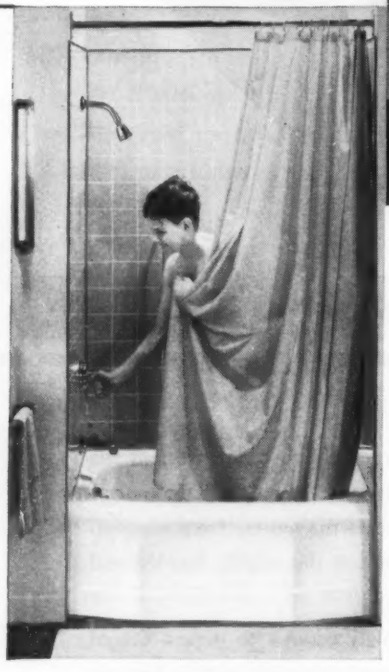
Because of these characteristics, Brixment mortar makes a *better bond.* Isn't this what you want in *your* brickwork?

LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE 2, KY.

KOHLER STANDISH

New space-conserving shower bath





Standish enameled iron recess shower bath, K-305-F,

The compact, handsome Standish affords practical space-economy for homes, apartments, hotels, dormitories and motor courts, and for remodeling. Shorter and wider than the average bath, it is roomy and deep for showering—and suitable for bathing. The low front, 14″ off floor, makes it especially useful for bathing small children.

The bench rim is five inches wide at center. The lustrous Kohler enamel is fused to non-flexing iron, cast for strength and rigidity. The chromium-plated Niedecken mixer fitting simplifies control of water temperature.

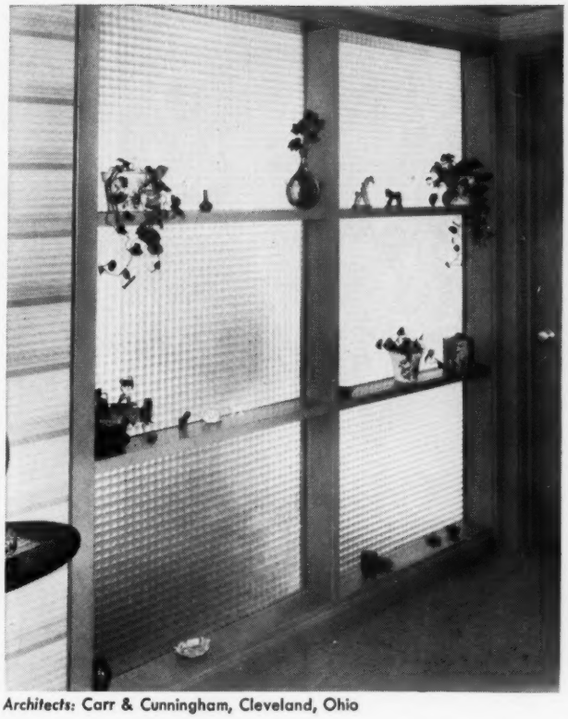
Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS • AIR-COOLED ENGINES • PRECISION CONTROLS

For an Entrance →

Architect: Raymond J. Willis, Oakland, California

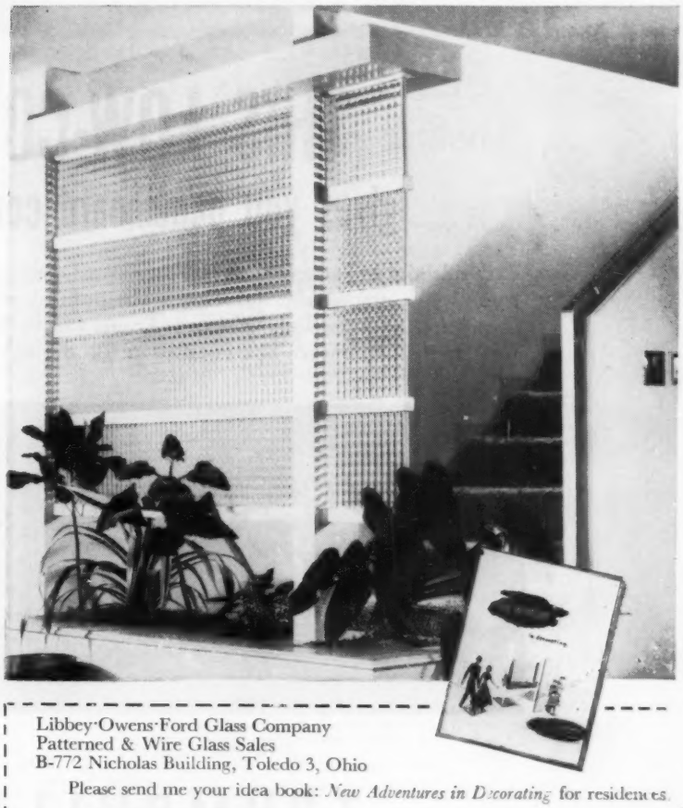


Architects: Carr & Cunningham, Cleveland, Ohio

← For a Partition

Architect: Frederic Barienbrock, Santa Monica, California

As a Screen →



GIVE YOUR HOUSES

Smart Individuality

WITH TRANSLUCENT GLASS

The extra touch—the eye-opener that wins instant admiration and approval—that's what you get when you use Blue Ridge *Patterned Glass*. It makes new houses look smarter—makes old houses look newer.

It brightens rooms, it decorates, and it adds a lot of charm to a home. And it's economical to use—especially in view of the fact that it means just that much less plastering, painting and papering. Blue Ridge *Patterned Glass* never needs refinishing—its sparkling beauty is always renewed with the wipe of a damp cloth. It lets light through, but guards privacy.

The ways you can use Blue Ridge *Patterned Glass* to brighten and decorate a home are as wide as your imagination. You can choose from more than 20 attractive patterns—linear, textured and checkered—with pronounced design or over-all soft diffusion. Ask your L·O·F Glass Distributor or Dealer to show you samples.

BLUE RIDGE
Patterned GLASS

Libbey·Owens·Ford Glass Company
Patterned & Wire Glass Sales
B-772 Nicholas Building, Toledo 3, Ohio

Please send me your idea book: *New Adventures in Decorating* for residences.

Name (please print)_____

Street_____

City_____ Zone_____ State_____

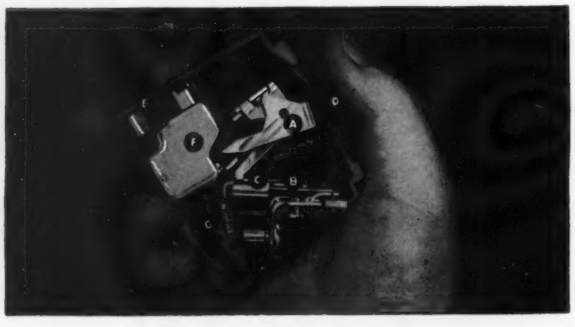
THIS LOW-COST LOAD CENTER

gives you panelboard construction at load center prices

Residential and commercial TRUMBULLITE Load Center uses plug-in, quick-make, quick-break circuit breakers.

TRUMBULLITE is easily mounted. Fronts can be lined up regardless of uneven box installation. 12- through 20-circuit Load Centers are designed for sequence phasing—adjacent Breakers are on alternate phases—assuring balanced loads.

Write for bulletin on TRUMBULLITE—TEB-12.



QUICK-MAKE, QUICK-BREAK Trumbull's TQL Breaker interrupts with a *snap*. Movable contact arm (A) opens or closes *fast*... reduces burning or arcing of contacts. *Double protection—thermal and magnetic:* Trumbull's new TQL is tripped automatically by (B) time-delay thermal action of excessive overload (not by harmless temporary overloads) or by (C) instantaneous magnetic action for short circuit. *Trip-indicating:* When an overload or short circuit trips the Breaker, handle (D) moves to mid-position between OFF and ON. *Trip-free:* Automatically trips independently of handle. *Other features:* Pressure-type silver-plated copper contacts (E), arc chute (F) made of special refractory material, tamper-proof exhaust chamber (G) to cool gases, Underwriters' Laboratories Inc. approved. *Interchangeable ampere ratings:* 15, 20, 30, 40, 50 amp.; 120 volt A-C, single pole, single throw. Interrupting: 5000 amp. 120 volt A-C. 120/240 volt A-C. Two-pole operation possible with handle extensions.

TRUMBULL (T) ELECTRIC

DEPARTMENT OF GENERAL ELECTRIC COMPANY

PLAINVILLE, CONN.

30 DAY FIRE GUTS WAREHOUSE

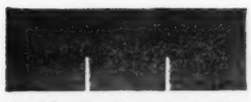
FAILS TO DESTROY STOCK OF FIRE-CHEX ASBESTOS-PLASTIC SHINGLES STORED INSIDE

"We Saw it With Our Own Eyes! Carey Fire-Chex Shingles are Fireproof!" Say Officials of Mohawk Building Materials Corporation

RENSSELAER, N. Y., December 6, 1951 —The fire that broke out on November 6 and destroyed two sections of the Rensselaer warehouse, owned by the Mohawk Building Materials Corporation, was finally extinguished last night, 30 days after the alarm was turned in.

Although the fire in most sections of the building was brought under control within ten days, it smouldered in the insulation board and roofing section for a full month. In this section, eighteen inch brick walls collapsed during the early stages of the fire, burying the roofing and insulation to a depth of over ten feet. Firefighters scored complete victory last night, when they spread this mass with a bulldozer and extinguished the flames.

As the rubble was cleared away, several piles of Carey Fire-Chex shingles were observed to be still standing. The wood pallets on which the shingles were piled had burned away, and the paper cartons were gone, but the shingles were still in good condition. Officials of the Mohawk Building Materials Corporation stated that the Carey Fire-Chex shingles were just slightly stuck together on the 12" edges, but not enough to prevent sliding them out from beneath the wire ties. "We saw it with our own eyes. Carey Fire-Chex shingles are fireproof," said C. Lawrence Fenner, vice president of the firm.



Fire-Chex asbestos-plastic shingles are an exclusive product of the Philip Carey Mfg. Company, Lockland, Cincinnati 15, Ohio, widely known manufacturer of asbestos and asphalt building materials. Coated with a patented asbestos-plastic, Fire-Chex have been tested by Underwriters' Laboratories, Inc. and found to resist fire so effectively that they are rated "CLASS A" without underlayment by Underwriters' — the highest possible rating for fire protection. Fire-Chex are the only roofing material of any kind to carry this highest fire-protective classification.

Steel I Beams Twist Like Pretzels . . . But Fire-Chex Virtually Unscathed During "Baptism by Fire"

FIRE-CHEX are 'tops' for beauty, too! They're the only shingles designed for application in gorgeous Shadow Blend Roof Designs, copyrighted as 'works of art.' Ask your Carey dealer to give you the profit-pyramiding facts about FIRE-CHEX — pronto! Or, mail coupon for sample of Fire-Chex and informative literature!

THE PHILIP CAREY MFG. COMPANY

Carey

Lockland, Cincinnati 15, Ohio

Underwriters Laboratories, Inc. ROOFING MATERIAL 1/4 SQUARE CLASS A

In Canada:
The Philip Carey Co., Ltd.
Montreal 3, P.Q.

THE PHILIP CAREY MFG. COMPANY
Lockland, Cincinnati 15, Ohio Dept. HH-7
In Canada: The Philip Carey Co., Ltd.
Montreal 3, P.Q.

Gentlemen:
Please send me a sample of Carey Fire-Chex asbestos-plastic shingles and informative literature. I will not be obligated in any way.

NAME_____
FIRM_____
ADDRESS_____
CITY_____ ZONE_____ STATE_____

Calculite...
crisp design,
controlled lighting

Alumilite Reflector coordinated with Colouvered* Fresnel Type Lens supplies intensive, yet soft, down light.

Regressed Lens removes annoying glare from ceiling line.

Fiberglas Gasket assures perfect fit on uneven ceilings, eliminates light leakage and dust streaks caused by convection currents.

Torsiontite* spring fastener snaps frame down from any side for easy relamping.

Pre-wired for U. L. approved quick installation in all types of construction.

LIGHTING *by* LIGHTOLIER

Lightolier Calculites are available in lens, louvre, flat and formed glass, and pin-hole types. For complete catalog and data, write LIGHTOLIER, INC., Jersey City 5, N. J.

*PAT'D. REG. U. S. PAT. OFF.

ARE HIGH, ON-SITE LABOR COSTS A PROBLEM?

AMERICAN HOUSES, INC., OFFERS YOU

A PRACTICAL SOLUTION

You sold your last house at the price you set on it. Did you get the profit you expected?

Or—did costly delays here and there, or other unexpected labor costs eat into *your* share of the selling price?

American Houses, Inc., can help you lick the high, on-site labor cost problem. Through our system of combining the best features of prefabrication with efficient, on-site follow through, you erect on a fixed time schedule, with fixed costs. You eliminate the extra man-hours.

A big share of the labor is done right in our plant and is included as part of the house, at a fixed price to you. With scheduled delivery dates on all materials, construction moves forward on a well-planned schedule, with no idle time you have to pay for. Your sub-contractors will like this new system because they, too, can schedule their work better. They will be able to figure closer and more accurately. You will all benefit.

No matter what your position in the home building field may be now, if you follow American Houses' plan you will step up among the leaders in your area. You will be offering the houses people want to buy, and at a price they're willing to pay—including a predictable profit for you.

Get *all the details* about the American Houses plan before you break ground for another house.

MAIL THIS COUPON TODAY!

American Houses, Inc., Dept. H-7,
165 West 46th Street, New York, N. Y.

Please have your representative call to show me how you can help me solve the problem of

- ☐ High labor costs
- ☐ Slow sales turnover
- ☐ Working capital tied up too long
- ☐ High costs on sub-contracts

I expect to build_____houses this year.
Price range $_____to $_____. I employ_____men.

Name_____

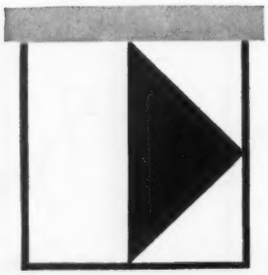
Address_____

AMERICAN HOUSES, INC.

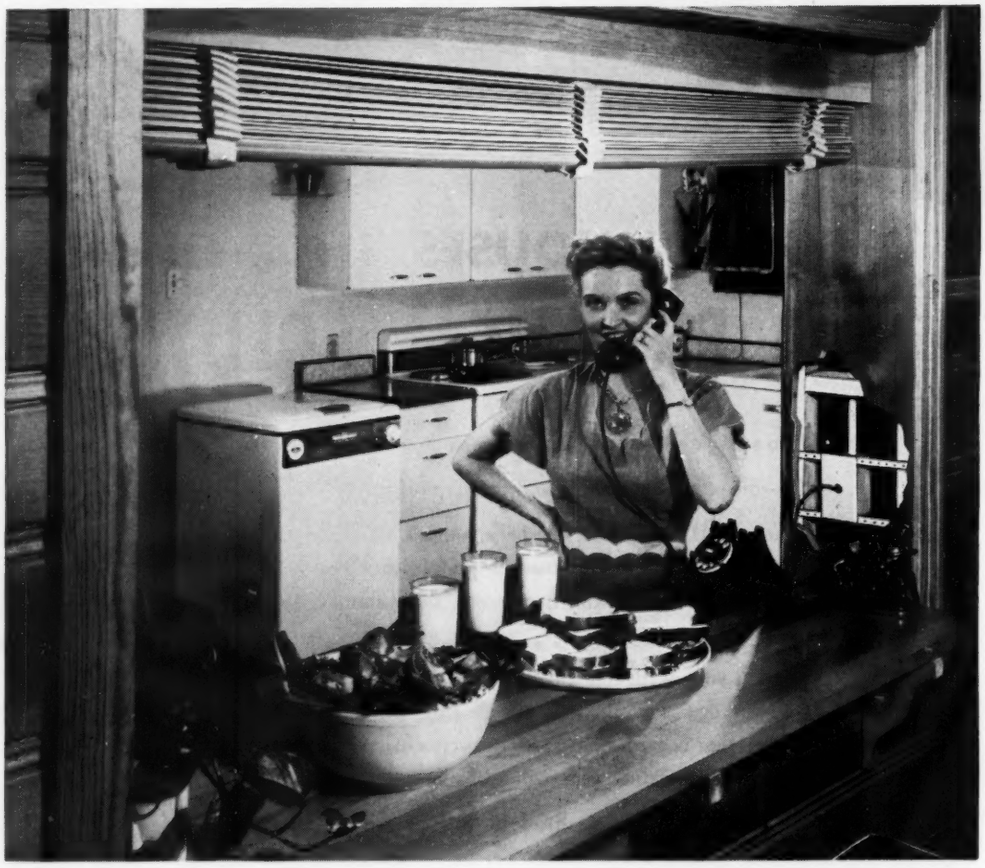
165 West 46th Street, New York 36, N. Y.

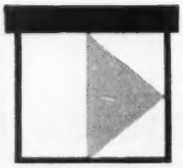
PLANTS AT

Allentown, Pa. Lumberton, N. C. Cookeville, Tenn.



as fundamental as
counter tops...





A good plan is always better when it includes symbols for telephone outlets.

Without working surfaces, a kitchen fails in one of its chief functions. And without telephone raceways, walls, too, are functionally incomplete. Raceways keep telephone wires out of sight and so protect the beauty of carefully planned interiors. The cost is low. Client acceptance is high.

Your Bell Telephone Company will be glad to help you work out economical telephone conduit installations. Just call your nearest Business Office.

BELL TELEPHONE SYSTEM

4850 Schlage Locks stand watch on the superb, new S.S. United States

U. S. LINES AGAIN CHOOSES SCHLAGE LOCKS

Locks face their most gruelling tests aboard ship. Sea duty subjects locks to everlasting motion during every minute of every voyage, and to the continuing corrosive action of damp salt air.

During 12 years of this rigorous service on the S.S. America, Schlage Locks have proven their ruggedness and their extreme resistance to corrosion. Now, U. S. Lines has again selected the time-proven Schlage Lock for use throughout the magnificent, new S.S. United States.

Schlage Locks for commercial buildings and residences have the same type of durable mechanism as the locks used on the S.S. United States.

FACTS ABOUT THE S. S. UNITED STATES
THE LARGEST SHIP EVER BUILT IN THE UNITED STATES

Length	990′	Gross tonnage	Over 50,000
Beam	101′6″	Total passengers . .	2,000
Depth: Keel to top of forward funnel . .	175′	Total crew	1,000
Number of decks . .	12	Estimated cost	$70,000,000
Speed . . .	30 knots plus	Builders: Newport News Shipbuilding and Dry Dock Co.	

Schlage Saturn Design in Luster Sealed* Aluminum is used throughout the S.S. United States

Luster-Sealed Aluminum, treated with Alcoa's alumilite process, permanently resists corrosion and needs no polishing . . . ever!

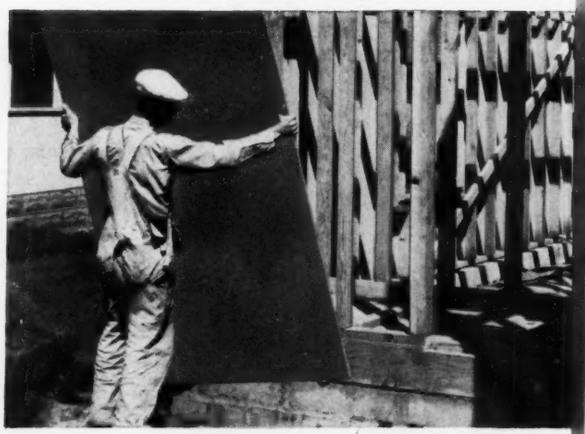
SCHLAGE®

THE TIME-PROVEN CYLINDRICAL LOCK

Schlage Lock Company, San Francisco, California

SCHLAGE LOCK COMPANY OF CANADA, LTD., VANCOUVER, B. C.

"I save $115 per home



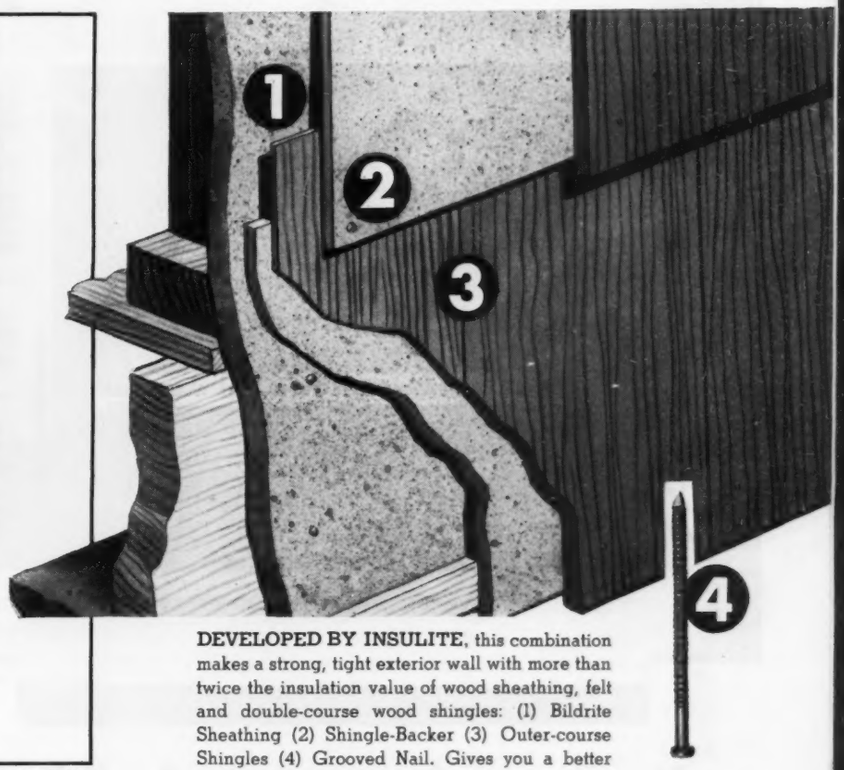
BILDRITE SHEATHING goes up faster, easier. Cuts application time at least 25%. 4-foot sheets have twice the bracing strength of horizontally-applied wood sheathing thus save corner-bracing. Waterproofed throughout . . . eliminates need for building paper. No matching loss or waste.

with new Insulite Shingle-Backer system!"

Application time cut in half; greater insulation and bracing strength; deep, modern shadow-lines; money saved on every home—that's why R. F. Metscher, Huntington, N.Y. contractor demands Insulite Shingle-Backer and Bildrite Sheathing.

R. F. METSCHER, *General Contractor, Huntington, New York*

INSULITE SHINGLE-BACKER speeds completions. Handy 4-foot panel applies far faster and easier than wood under-course shingles . . . cuts application time in half. Produces deep, modern shadow-line. Eliminates waste. Waterproofed throughout. In easy-to-handle packages.



DEVELOPED BY INSULITE, this combination makes a strong, tight exterior wall with more than twice the insulation value of wood sheathing, felt and double-course wood shingles: (1) Bildrite Sheathing (2) Shingle-Backer (3) Outer-course Shingles (4) Grooved Nail. Gives you a better wall for less money!

INSULITE AND BILDRITE ARE REG. T. M., U. S. PAT. OFF.

FREE KIT FOR BUILDERS. This helpful Special Insulite Kit for Builders is yours for the asking. Contents include Insulite's Cost-Comparison Folder with which you can easily figure your actual savings with Shingle-Backer and Bildrite. For your free kit, write Insulite, Minneapolis 2, Minnesota. Or, for immediate information, contact your Insulite sales representative or Insulite dealer.

Build and insulate with double-duty

INSULITE

Made of hardy Northern wood

MANDO

INSULITE DIVISION, Minnesota and Ontario Paper Company, Minneapolis 2, Minnesota

New! This Kelvinator 30-inch electric range with "GREAT SCOT" Oven!

Model ER-352 illustrated

Highest Underwriters' Laboratories installation rating

Big range performance at a Small Range Price! Automatic Cooking, Too!

Now! The ideal range for today's compact kitchens —and at a terrifically low price! *All* the advantages of big range cooking! An oven big enough to roast a full Thanksgiving dinner including a 22-lb. turkey! New "Heat Lock" oven door for more economical cooking! Automatic Oven-Timer Control! 4 super-fast, 7-heat surface units! Full-width storage drawer! Everything needed for cool, clean, fast, economical cooking! At a price that's as Scotch as heather! Consider it for your projects now!

- **Space Saving Dimensions . . . only 30 inches wide!**
- **Giant Oven—full 23 inches wide!**
- **New, Exclusive "Heat Lock" oven door! Keeps heat inside oven!**
- **Fast Oven Pre-Heat. Pre-heats to 350° in less than 5 minutes with automatic cut-off.**
- **4 High-Speed Surface Units, with 7 controlled heats for greater cooking flexibility!**
- **Automatic Oven Timer—built right into this beautiful streamlined range.**
- **Full-Width Storage Drawer.**
- **Handy Appliance Outlet.**
- **Concealed Oven Vent. Excess cooking vapors vented through rear surface unit to prevent staining.**
- **Superior porcelain enamel: Outside front, top and sides are white titanium porcelain enamel, acid- and chip-resistant.**

THERE IS A BETTER ELECTRIC RANGE FOR BUILDERS...

IT'S **Kelvinator**

Division of Nash-Kelvinator Corporation, Detroit 32, Michigan

REFRIGERATORS, RANGES, HOME FREEZERS, WATER HEATERS, DEHUMIDIFIERS . . . *Electric, of course!*

35% rise in building seen by 1975; US report flays waste by industry

The year's most comprehensive mouthful about the US building industry and its future was said last month by the President's Materials Policy Commission in its monumental, 813-page report on the nation's resources outlook for the next quarter century. The commission forecast:

▸ By the 1970's, the annual physical volume of construction may well soar 39% above the 1950 level to reach a whopping $34½ billion *(see graphs)*. Reason: US population will probably rise 25% and the national output of goods and services, advancing its historic rate of 3% a year, should double.

▸ The job ahead from now until 1975 calls for "large increases over the rate of construction from 1926-50" for every category of the industry. *Homebuilding would have to maintain an average rate of 1,400,000 units a year!* The industry would be called upon to produce 35 million homes, 7.4 billion sq. ft. of factory space, 4.2 billion sq. ft. of commercial warehouse, office and store floor space, schools with 20 million desks and hospitals with 1.4 million beds.

▸ This zooming national appetite for building will mean that construction—already the "largest user of materials in the US economy"—will gobble up one-third more materials in 1975 than in 1950. Therefore, unless the industry mends its wasteful ways, turns from relatively "scarce" materials like copper, lead, zinc and lumber to more plentiful substitutes like aluminum, plastics, glass, asphalt, gypsum and concrete, it will add importantly and needlessly to US raw materials problems. The commission noted that US industry outgrew its resources base during World War II, thus pushing the nation over the divide to a net importer of raw materials.

FHA as antiwaste club? To batter down roadblocks to waste-and-cost-cutting economy of raw materials, the commission made these specific recommendations—most of them controversial enough to promise loud debate in the construction industry for months or years to come. The recommendations:

▸ The Department of Justice and Federal Trade Commission should step up efforts to enforce antitrust laws against building and building materials industries. (A quarter of the nation's antitrust suits so far, the materials commission noted, have involved the building industry.)

▸ A single federal building code should be created based on performance standards. It should be mandatory for all federal construction, including public housing built with federal aid.

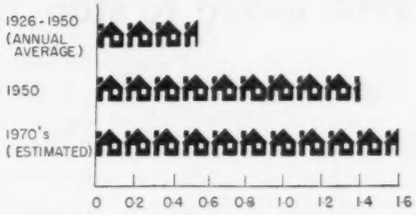
▸ FHA and VA should adopt these "national construction standards" as their minimum requirements, and "should not grant mortgage insurance for housing constructed in areas which have building codes and zoning laws which do not permit use of alternative materials permitted by the national standards."

▸ Congress should give HHFA more money for housing research (the noncontroversial recommendation). HHFA should apply the lessons learned in public housing and slum clearance programs. A nongovernmental agency like BRAB should coordinate and give wide distribution to research findings.

In an election year, immediate adoption of the recommendations was unthinkable, but some of them might show up in political party platforms. In that case, they *might* be translated into action next year. At the least, the presidential report would form the backdrop for government-industry disputes or agreements for years to come. Its overall implications carried a clear warning to construction men: either weed your own garden of costly and wasteful featherbedding, trade restraints, archaic codes and uncoordinated research or the people will demand that the government do it for you by force.

For details of the commission's findings, turn the page.

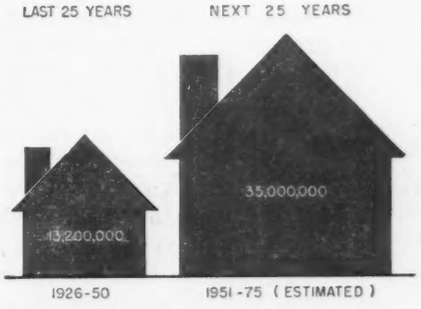
THE NEXT 25 YEARS: HOMEBUILDING RATE SHOULD RISE



Source: President's Materials Policy Commission

Although the housing industry has come to regard 1950's record production of 1.4 million homes as a high-water mark, presidential commission estimated housing would be going up at a 1.6 million a year clip by the 1970's. It also expected a big rise in commercial and industrial building.

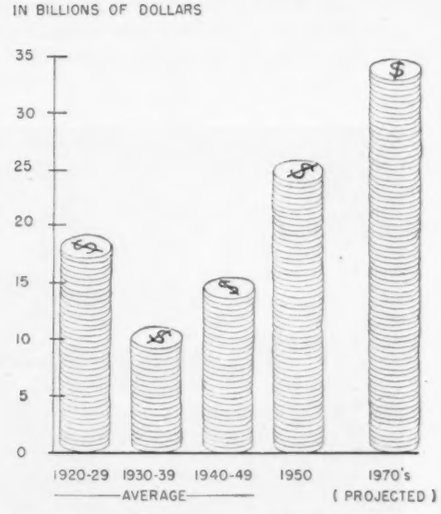
TOTAL PRODUCTION SHOULD DOUBLE



Source President's Materials Policy Commission

Demand for homes may well require the US housing industry to more than double its performance of the last 25 years during the coming quarter century, the commission predicted. It also foresaw larger homes "if real incomes rise," suggested that by the 1970's the average value of new houses may jump from $8,500 to $9,500 in terms of today's dollars.

BUILDING VOLUME GAINS DUE



Source: President's Materials Policy Commission

On its assumption that the overall US economy will continue to grow, presidential commission projected $34.5 billion construction volume for 1970's (excluding engineering structures as roads, dams, docks).

Gov't urged to lead in cutting building waste; FHA asked to stop 'fortifying' waste in codes

Bulk of the Materials Policy Commission's chapter on construction dwelt on its fabulous waste of materials, echoed much of the results of THE MAGAZINE OF BUILDING'S round tables on waste in construction (Sept. '50 and March '51 issues). "Nowhere," mourned the commission, "are technological opportunities and barriers to their attainment better illustrated than in the building industry. . . . Many innovations have been thoroughly tested. They work; yet have been put to relatively little use."

How to save. Specifically, the commission declared that "economically feasible" changes already in sight could by 1975 cut construction's demand for copper and lumber in half, cut its use of lead by a fourth, use of zinc by a fifth. Said the report: "Iron and steel (for example) may replace lumber for some uses (house frames) and may in turn be replaced by plastics in other instances (bathtubs, sinks). Or an unnecessary use of a scarce material may be eliminated altogether through changes in design: for example, wider eaves remove the need for gutters and downspouts, often made of scarce copper. . . . Where brick and lumber walls are now common we can expect greater expanses of glass, aluminum and gypsum products by 1975.

"Plumbing, heating and air conditioning in 1975 would take vast quantities of scarce metals if 1950 patterns of use are continued. But . . . plastic pipes . . . are already becoming competitive with copper, lead, brass, iron and steel pipe. More efficient designs and less stringent codes would reduce cast-iron pipe requirements by another 20%, and allow replacing cast-iron in bathtubs, sinks and toilets with plastic. . . .

"In electrical systems aluminum can substantially replace copper wire by 1975 if habit and unnecessary local code restrictions are overcome. Codes and custom often require needlessly heavy galvanized steel conduits for wiring. Hundreds of thousands of tons of steel and zinc could be saved through use of lighter conduits or plastics and with no sacrifice of safety standards. . . . Titanium oxide can, even more than in the past, replace lead and zinc in paint."

Trade restraints. Technology has so far outstripped acceptance of new waste-cutting building techniques that the commission declared the "great challenge to public and private policy" lies in demolishing the "man-made obstacles to changing use of materials." The commission blamed the building industry itself for perpetuating many of the roadblocks for selfish ends. The commission commented on these:

Nature of the Building Industry—The "small, inefficient builder," craft union labor and the "burden of financial control and supervision" borne by construction are the three biggest obstacles to cheap, efficient building. The "large proportion of small, inefficient builders"—especially in home-building—are helpless victims of "violent fluctuations of demand, restrictions imposed by lenders, and a notoriously costly distribution system" in which "distributors often attempt to protect their market by combinations to boycott producers who attempt to circumvent the distributors and deal directly with the builder." Thus they cannot afford to introduce new ideas and methods. Fortunately, the number of larger building firms is growing. But the industry needs more mergers.

Craft union organization of building labor has caused jurisdictional strikes, featherbedding and "keep out" policies for prospective craftsmen. On lenders: "No other important group in our economy bears the burden of financial control and supervision that is imposed on the building industry. Housing must meet the mortgagee's standards, usually requiring conservatism in design and materials."

Restraints of Trade—Despite the fact that a quarter of the government's antitrust suits have been aimed at the building industry, "restraints of trade . . . continue. Combinations of distributors bar the use of competitive materials. Agreements among subcontractors in bidding reduce competition. Patent and license agreements are used to control prices and prevent competition. All these practices are vastly expensive to the public. Moreover, they often take place with the concurrence of labor and are abetted by local codes and licensing provisions which [stifle] competition."

Building Codes—Under the guise of protecting health, welfare and safety, local building codes "have often become devices for protecting select groups in and out of the building industry at the expense of the general public." The wide variety of standards in the nation's 2,200 local codes wrecks chances for manufacturing economies and inhibits research because the very diversity of standards creates a legal barrier to the market. The solution: uniform codes based on performance standards instead of rigid specifications of materials. But the "discretion necessary for enlightened administration of performance-type codes also permits serious abuse."

Inadequacy of Research—"The disorganization, low capitalization, localism and conservatism which plague the building industry have discouraged research" by private groups. In agriculture, organized much like construction, federal and state governments have taken over research. For building, little government-financed research is under way and HHFA, in charge of housing research, has suffered serious budget cuts.

Federal leadership. As the largest single customer of the building industry, the Federal government could lead the way to cut costs and waste of materials, said the commission. "Federal building [is] not legally bound by local regulations. Yet in practice most government agencies conform with local construction codes even though this may lead to waste." It was for

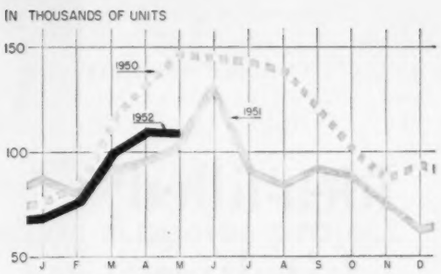
LIFE—*George Skadding*

COMMISSION MEMBERS were (l to r) Eric Hodgins, member of the board of editors of FORTUNE; President Arthur Bunker of Climax Molybdenum Co.; Chairman William S. Paley, board chairman of Columbia Broadcasting System; Engineer George R. Brown, chairman of Texas Eastern Transmission Corp.; Edward S. Mason, dean of Harvard's Graduate School of Public Administration. They were aided by a staff of 120 who worked 1½ years, spent $950,000 assembling data.

this reason that the commission recommended that "an agency" of the government "formulate and keep up to date national standards of building construction with participation of . . . an advisory board of interested Federal agencies and nongovernment technical groups."

Needle for FHA. Behind the commission's recommendation to ban FHA insurance in cities with codes that require waste of materials, lay a pointed reference to the irony of the government making its "major effort" in housing that of easing the financial burden of home ownership through VA and FHA, yet permitting construction practices that cost buyers almost as much. In a thinly veiled slap at FHA's Balkan empire of semiautonomous district offices, the commission declared: "The great possibilities of using Federal mortgage insurance . . . as a device for conserving materials have not been exploited. Thus far, although the FHA has formulated "Minimum Construction Requirements" (*sic*) for the guidance of its 72 local offices, it has permitted these offices to establish their own minimum standards consistent with local codes which almost invariably call for greater use of scarce and costly materials. In practice, the Federal program has tended to fortify the rigidities and wastefulness of local codes instead of creating inducements for reform by offering financing for homes constructed on more economical standards."

HOUSING STARTS



Source: Bureau of Labor Statistics

CONTINUING HIGH volume of housing starts in May put the total for the first five months of 1952 at 455,600, only 1,900 units below the January-May '51 mark. Most statisticians thought the trend indicated homebuilding was headed for a 1952 volume close to or just under 1.1 million.

Builders charge 'double cross' as Congress delays Reg. X relaxation at least 4 months

Two days before the Defense Production Act was due to expire, Congress ground out a 35-amendment extension so involved that some controls affecting building were continued three months, some ten and some a full year. The Senate passed the bill by a voice vote. The House adopted it 194-142. President Truman signed it reluctantly (*see below*) although some of his aides, including Price Boss Ellis Arnall, declared "it could have been much worse."

Double cross? Unhappiest of all were homebuilders. NAHB President Alan Brockbank charged "home buyers have been double crossed." What rankled was what happened to Regulation X in a midnight conference session on Capitol Hill.

The Senate had continued credit controls in full force. The house had voted to abolish both Regulation W (already suspended) and Regulation X (eased slightly June 9). In the early morning hours of Saturday, June 28, House-Senate conferees hammered out the deal (written with the aid of HHFA lawyers and Staff Director Joseph McMurray of the Senate Banking Committee) that earned NAHB's wrath. Chief backers of the final version were Senators Sparkman and Robertson.

At a 2 A.M. press conference as groggy conferees adjourned, newsmen were told the committee agreed on language that would remove credit curbs on housing July 1, give the administration power to reimpose them if starts jumped above an annual rate of 1.2 million. Headlines across the country promptly raised false hopes. Next day, as both houses accepted the conference measure with almost no debate, HHFA divulged the real story.

Three month wait. The law provides that the government cannot require down payments on homes in excess of 5% if, for a three month period, housing starts dip below an annual rate of 1.2 million. But HHFA lawyers ruled the three month counting period would have to begin after the law took effect. Since President Truman signed it June 30, under the complex language of the act, down payments could not be relaxed before Oct. 1 at the earliest. Left unchanged were the government's power to compel 20-year amortization and credit controls over commercial construction (50% down payment). The full text of the complicated verbiage:

"Notwithstanding the provisions of 602 and 605 of this title, the authority of the President, which is derived from said section to impose credit regulations relative to residential property, shall not be exercised with respect to extensions of credit made during any 'period of residential credit control relaxation,' as that term is herein defined, in such manner as to impose any down payment requirement in excess of five per centum of the transaction price.

"The President shall cause to be made estimates of the number of permanent, nonarm dwelling units, the construction of which has been started during each calendar month and, on the basis of such estimates, he shall cause to be made estimates of the annual rate of construction starts during each such month, after making allowance for seasonal variations in the rate of construction.

"If for any three consecutive months the annual rate of construction starts so found for each of the three months falls to a level below an annual rate of 1.2 million starts per year, the President shall cause to be published in the *Federal Register* an announcement of the beginning of a 'period of residential credit control relaxation,' which period shall begin not later than the first day of the second calendar month following such three consecutive months. Each such relaxation period may be terminated by the President at any time after the annual rate of construction starts thereafter estimated for each of any three consecutive months exceeds the level referred to in the preceding sentence."

Relaxation guaranteed? By holding out the prospect of easier purchase terms in mid-fall, the law thus promised to depress the housing sales market for the rest of the summer. If that happens, builders would almost certainly cut back production, thus

HOW EXTENDED CONTROLS ACT AFFECTS BUILDING

It took 35 amendments and arguments far into the small hours of Saturday morning, June 28 before a House and Senate conference committee could agree on renewing the Defense Production Act. Chief features:

Down payments. When housing starts for a three-month period drop below an annual rate of 1.2 million the FHA and Federal Reserve Board must reduce down payments to a maximum of 5%.

Rent. Unless nondefense communities take affirmative action to the contrary, rent control ends September 30. Rent ceilings in 116 critical areas (with 1,150,000 housing units) will remain until April 30.

Wages. Controls extended to April 30. Increases up to $1 an hour no longer need be cleared with WSB. Professional engineers and architects are exempted from wage and salary control.

Wage Stabilization Board. The board is banned from having jurisdiction in any labor dispute and so cannot repeat its steel industry intervention.

Critical areas. A new defense area advisory committee is established to decide which community's housing needs can be called critical.

Allocation. Authority for allocations and priorities is extended to June 30 '53.

Prices. Controllable until April 30.

Idea-filled kitchens help sell houses

OFFER a kitchen like this that's full of attractive, practical ideas and you're well on the way to winning approval of the woman prospect, a vital link in home sales.

The step stool under the sink, the shelf of glass containers below the window for storing dry groceries, and the double-duty work and dining counters are moderate cost kitchen extras that help set your house above the average.

Installing a floor and counter tops of Armstrong's Spatter Linoleum is another way of making a hit with the feminine buyer. Spatter, the most popular new linoleum styling in 20 years, comes in eleven colorings. It makes a handsome floor whether laid just as it comes from the roll or in custom effects.

Ease of cleaning is also a convincing selling point when your home has floors of Armstrong's Linoleum. Women know that its smooth, practically seamless surface requires very little care. Armstrong's Spatter is highly practical, because the spatterdash effect tends to conceal footprints and tracked-in dirt until they can be wiped up. Greaseproof, long wearing, quiet and comfortable underfoot, Armstrong's Linoleum is the logical choice for kitchens, where traffic is concentrated and occasional spilled things are unavoidable.

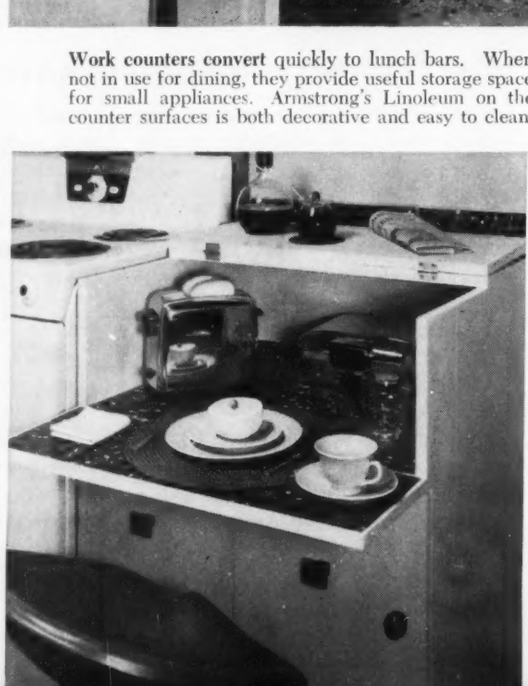
Whether you're building one house or a multiple-unit project, you can profit by adding the extra sales appeal of Armstrong's Linoleum.

SEND FOR FREE ROOM PLAN

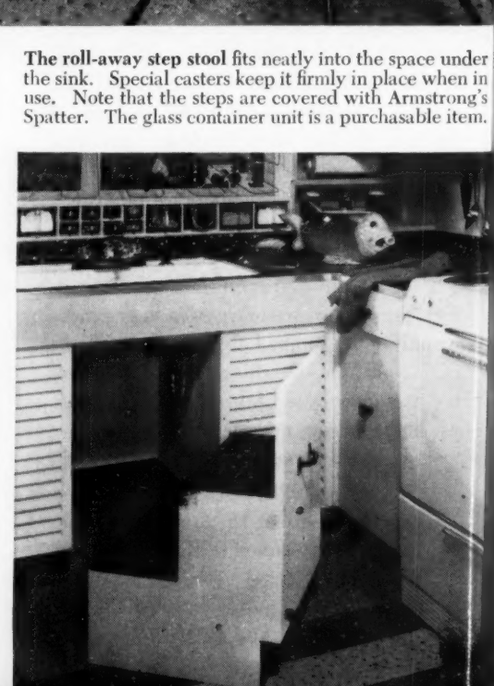
For a floor plan of this kitchen, with a description of the color scheme, layout of the fixtures, and a complete list of furnishings, write Armstrong Cork Company, Floor Division, 1407 State Street, Lancaster, Pennsylvania.

ARMSTRONG'S LINOLEUM

Work counters convert quickly to lunch bars. When not in use for dining, they provide useful storage space for small appliances. Armstrong's Linoleum on the counter surfaces is both decorative and easy to clean.



The roll-away step stool fits neatly into the space under the sink. Special casters keep it firmly in place when in use. Note that the steps are covered with Armstrong's Spatter. The glass container unit is a purchasable item.



making a period of credit relaxation inevitable. Truman, too, figured housing credit was doomed, but for less sophisticated reasons. The President said the 1.2 million rate "has been exceeded only once in our history (1950). . . . This probably means that the power to control real-estate credit will . . . be eliminated." Some skeptics noted that HHFA could now manipulate housing starts to suit its own purposes. Thus, if officials wanted to push starts over a 1.2 million rate to balk easing of credit curbs, they could rush construction of public housing during a single critical month.

Rents. The amended Defense Production Act practically killed rent control. Ceilings in nondefense areas end Sept. 30 unless local governments vote to stay under the federal program. (One joker is that action is required by *incorporated* towns; county governments have no power to act.) After signing the bill, President Truman took the occasion to jab at his favorite target again. Said Truman: "This opens the way for increases in rents for some 6 million families if the real-estate lobbies are able to forestall positive action by local bodies." Rent controls remain until April 30 in critical areas. A new defense-area advisory committee was created, giving Housing Expediter Tighe Woods a seat which he previously lacked.

No steel repetition. "The (Wage Stabilization) Board shall have no jurisdiction in any labor dispute," the act reads and, although retaining the WSB's labor-industry-public composition, it now requires board nominations to be approved by the Senate.

The steel strike which began June 2 had curtailed production of 400,000 tons of structurals by the end of the month, closed 50% of the nation's fabricators and, overall, cost the nation about half of a normal quarter's ingot production. Government officials predicted the pinch would hit the housing industry by mid-summer. DPA Boss Henry Fowler said the strike means there is now no chance of decontrolling steel before June '53.

President to restore BLS funds cut out by Congress

Ironically, the amended Defense Production Act will lean heavily on the Bureau of Labor Statistics' monthly report of housing starts just as Congress has sliced BLS' construction statistics budget from $625,000 to $300,000 a year. BLS officials said that was too little to keep their housing starts estimate as accurate as it should be as the thermostat governing credit controls.

The Bureau of the Budget came to the rescue. It was reported ready to give BLS a transfusion (probably $150,000 or $200,000) from presidential emergency funds. BLS expected to use the money to step up its surveys of lag and lapse in building permits, and to increase its check from quarterly to monthly on housing in 96 US counties where no permits are issued. From the 96 counties are projected some 22% of US housing production.

Other final action by Congress on appropriations: for HHFA office of the administrator, $4.6 million instead of the $6.25 million sought; for FHA, $4.88 million instead of the $5.63 million sought.

Public housing cut permanently to 35,000 starts; Congress acts on Los Angeles project

Last year, when Congress reduced public-housing starts to 50,000 a year it was only a token defeat for public housers. With their unwieldy program, that was about all the housing they could begin physically. But now, the program has picked up steam. Without restrictions, it could reach 75,000 to 100,000 units in fiscal 1952-3.

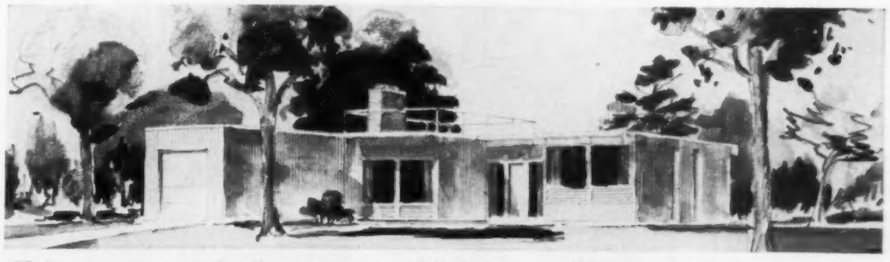
So when Congress this month clamped a 35,000 starts ceiling on public housing for the next fiscal year, it was a major setback for public housers. Moreover, the ceiling barred the Public Housing Administration from laying plans to build more than 35,000 units of public housing in any future fiscal year—a prohibition neatly designed to make a permanent cripple of the controversial federal program.

Toothless red rider. Public housers managed to avert another threatening wound. Conferees modified a House proposal to bar federal funds from public housing inhabited by Communists or members of organizations on the attorney general's subversive list. (This would have undermined the soundness of tax-free bonds that finance public housing.) What remained was a prohibition against reds, but with the proviso that local housing authorities may still collect loans and grants from the US treasury whether they harbor subversives or not.

Los Angeles ruckus. The Los Angeles' rhubarb over whether to proceed with a 10,000-unit public-housing program despite an overwhelming popular vote against it also landed in Congress' lap. In the wake of the balloting (H&H, June '52), California's Supreme Court reaffirmed its order to the city to carry out the $110 million program. This posed a threat of contempt citations for city councilmen if they followed the will of their constituents.

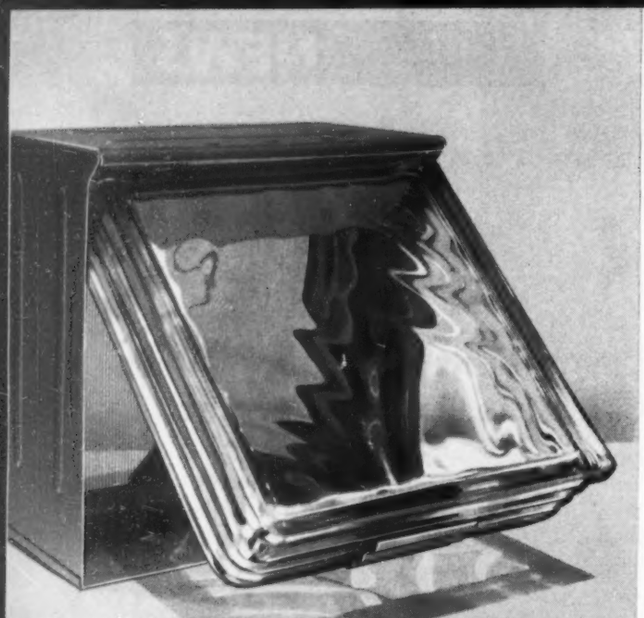
Into a supplemental appropriation bill which President Truman could hardly veto, Rep. Gordon L. McDonough (R, Calif.) slipped a retroactive amendment. It forbade PHA to pay any salaries as long as the agency proceeds with a public housing project rejected by local voters. But a conference committee added a proviso that public housers claimed negated the ban: communities would first have to "tender" the federal government "full reimbursement" for any funds advanced (in Los Angeles, $13 million). From debate in the House and Senate, it was unclear whether this meant Los Angeles would actually have to repay the $13 million or just agree to do so before PHA would be forced to call a halt. A court test seemed likely.

AIA endorsement. The American Institute of Architects, convening in Manhattan, reaffirmed its position as the only major building industry group fully supporting public housing. A resolution reversing that stand, offered by the Utah AIA chapter, died in committee for lack of support. The architects, however, lamented the "unfortunate number of stereotyped and barracks-like structures" going up under federal public housing auspices, called for a "re-examination" of federal subsidies to "reduce the accumulating load that has been transferred to taxpayers."



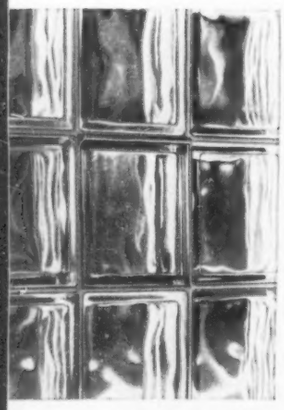
Chicago speculative tract will have solar heating

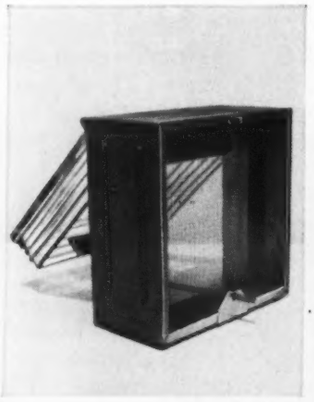
Chicago architects Fred and William Keck have designed a 24-unit solar home development, the first such use of sunpower, they say, in the $28,000-$29,500 range. The houses will be in three basic units—living, sleeping and garage-storage —all sufficiently flexible to be pivoted around in the 66' x 170' site for southern exposure. Double insulated glass areas will absorb solar heat with radiant tubing imbedded in concrete a cold-day standby. Louvers will provide ventilation.



INSULUX PANEL-VENT
and how it works

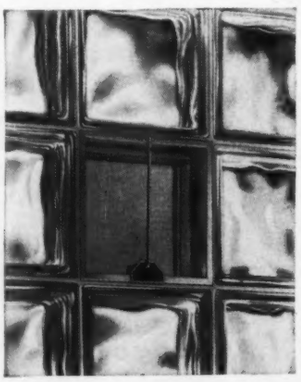
The *new* Insulux PANEL-VENT is a hinged, aluminum-framed half section of an eight-inch Insulux Glass Block. It is mortared into a panel in much the same manner as glass block.





Because the PANEL-VENT uses an actual half Insulux Glass Block, it fits and matches the panel into which it is set perfectly. Half blocks in any of six face designs are available. No special installation tools are needed.

PANEL-VENT is operated from within by a stainless steel rod. When closed, it is completely weathertight. An aluminum screen keeps out insects.



Use PANEL-VENT in existing block panels. Build it into new panel construction. Or, use it alone with concrete, brick or other materials.

Announcing

THE NEW WAY TO VENTILATE GLASS BLOCK PANELS

AT LAST there is a *new* way to ventilate Insulux Glass Block® panels without disrupting the symmetry of panel design.

Want more information? Our new folder gives complete details. Write for your copy and be ready with the answer when your customers ask how to combine the beauty and practicality of Insulux Glass Block with concealed ventilation. Address: Insulux Glass Block Division, Kimble Glass Company, Department MB-7, Box 1035, Toledo 1, Ohio.

INSULUX GLASS BLOCK

KIMBLE GLASS
COMPANY
Toledo 1, Ohio
Subsidiary of Owens-Illinois Glass Company

Dirksen introduces test bill against public housing

In the closing days of Congress, Sen. Everett Dirksen (R, Ill.) introduced a new public-housing bill obviously designed as a trial balloon to test whether public sentiment was shifting away from public housing as many a recent local election has indicated. Dirksen would:

- Require localities to shoulder one-third of construction costs of all public housing, contribute one-third of the annual subsidies.
- Bar families with incomes of more than $2,000 from admission, except in cities under 100,000 population, where the limit would be $1,500.
- Make public housing subject to the same taxation as private housing.
- Forbid construction of any project until local voters had approved both the project and issuance of bonds to cover the cost.

Congress did not act on the measure. Public housers indicated they were glad to have the issue so clearly joined during an election campaign.

Korea GI bill becomes law without warranty clause

Homebuilders persuaded the Senate to eliminate the builders' warranty from the billion-dollar-a-year GI Bill of Rights for Korea veterans. So Congress settled for a more promising system for preventing shoddy construction: the Veterans Administration got power to blacklist builders, lenders and appraisers with bad records. As President Truman signed the bill into law, it appeared a mandatory warranty for GI homes was dead for the rest of the year.

The new law—good for ten years—would open up an increasingly important market for builders. The armed forces were discharging veterans at a 65,000 a month clip. Moreover, the World War II GI bill runs until July 25, 1957.

VA bans new appraisals on homes too close to airports

Last month's Veterans Administration decision to review its policy on insuring homes near airports spread alarm. When VA directed regional offices to pass on to Washington all loan appraisals for homes within four miles of an airport, builders got out compasses and started drawing radii all over the map.

Cried Raymond E. Hanly, president of the New Jersey Homebuilders' Assn.: "If this directive is to include all airfields, 4,000 of New Jersey's 7,000 sq. mi. area—57%—will be affected. It will seriously hit thousands of unfinished homes where title to the veteran has not been closed." Echoed NAHB president Alan E. Brockbank: "Effect of the new VA policy will be construction delays while buyers sit and wait for action in Washington." But at the end of the month, the anticipated calamity turned out to be not so serious after all.

New rules. The VA sent out a directive telling its 67 field offices to resume appraising but to keep a careful eye out for any depreciation caused by proximity to airports. Prohibition zones (so far as VA evaluations are concerned) for 4,000′ runways will be a half-mile from either end and 500′ from either side. For shorter runways, the zones will be half the runway length on either end and 500′ from either side. Existing construction can still be considered for VA appraisals, but at reduced valuation.

Defense housing act gives Fanny May $900 million

Passing Congress in the pre-convention rush, the Defense Housing Act of 1952:

- Gave Federal National Mortgage Association $900 more advance commitment authority for defense and disaster areas; let FNMA use the balance of its funds (about $360 million) for over-the-counter purchase of FHA and VA loans written afer Feb. 29, 1952.
- Authorized $40 million for defense public housing (but HHFAdministrator Foley decided not to ask for the appropriation until next year).
- Authorized $40 million in grants and loans for community facilities in defense areas.
- Authorized $400 million for the FHA.
- Rescinded the ban on federal savings and loan associations buying FHA mortgages on homes over 50 miles from their place of business.

Air Force ready to spend $100 million to underwrite private family housing overseas

In April, after four months in his new part-time job as director of the armed forces housing agency, builder Thomas P. Coogan described himself as "amazed, astonished and pretty near overwhelmed with the requirements that must be fulfilled."

Last month, rotund Tom Coogan flew off to Europe for a three-week survey of another amazing housing requirement of the cold war—one that apparently would be fulfilled with the aid of a $100 million appropriation by Congress.

Little FHA. Afoot was a plan for the Air Force to start what in effect was a miniature FHA program for overseas troops of all services. A lot of hard military thinking lay behind the scheme. As Coogan explains it, in World War II the Pentagon made it a policy to "abruptly separate men from their families." This cut down the need for family housing. But today, "housing the family man becomes of paramount importance because we have to maintain the man if we want him to stay in the service."

Coogan likes to point out that it costs the air force, for instance, about $18,000 to train a mechanic to service an airplane. "If he does not re-enlist, most of the $18,000 is wasted. And whether he can find an adequate place for himself and his wife makes a great deal of difference whether he will." Overseas, Coogan adds, the soldier separated from his wife often gets into trouble— "and then he's in trouble at home, too." In the long run, says Coogan, "the cost of foreign housing is less than the cost of moving those men back and forth across the ocean." Moreover, the presence of American soldier families boosts the morale of NATO pact nations, too. They reason if the Yanks bring their wives, they must be overseas to stay.

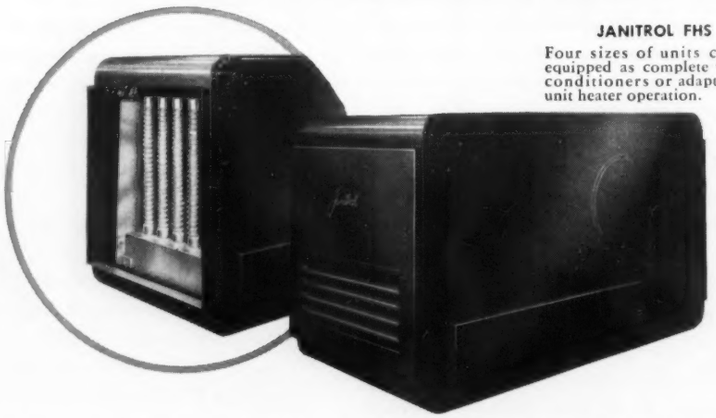
Slow progress. A few family housing ventures were sprouting already. At Chateau Roux in France, an agency of the municipality was building a 500 family project. A group of American importers was drawing plans for another in Casablanca. But Coogan conceded that among men who need family quarters, "there are a lot of troops badly housed."

Builders in countries like France said they were willing to put up more family quarters. But tight rent control would make such construction unprofitable if Americans left and the housing had to be rented to Frenchmen. Would Americans pay higher rents than the French? After deliberation, the Pentagon's housing experts agreed they could. Thus a plan took shape: if the US could provide a guarantee that our forces would not pull out before construction costs were amortized at least to where lower rents from the local market would support the housing, then foreign builders might be induced to build homes for married American noncoms and junior officers.

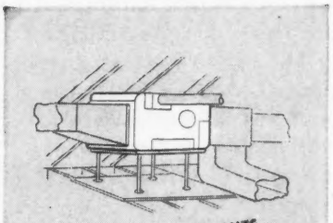
Quiet legislation. The Pentagon's solution was tucked away obscurely in the big ($2.1 billion) new military construction bill approved in the final legislative rush early this month. A never debated housing clause earmarked $100 million for the air force to underwrite the initial risk of attracting private capital into suitable rental housing developments for its own and men of the other services stationed abroad. (Presumably, this would be by guaranteeing occupancy for 10 or more years.) Where private capital still shied away, the air force would be empowered to build family housing directly—after getting approval from proper congressional committees for each site.

Most Versatile Warm Air Gas Heating Unit Ever Built

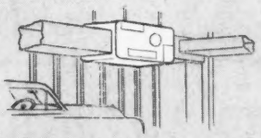
Perfect accessibility and adaptability for any type installation



JANITROL FHS
Four sizes of units can be equipped as complete winter conditioners or adapted for unit heater operation.

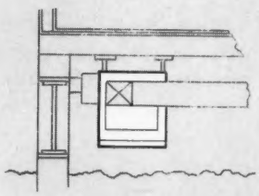


ATTIC INSTALLATION PERMITS CENTRAL LOCATION

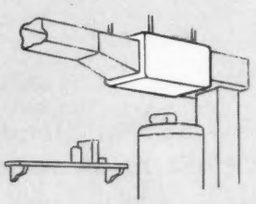


IN ATTACHED GARAGE ISOLATED FROM HOUSEHOLD

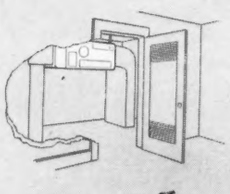
AS UNIT HEATER SAVES SELLING SPACE



IN CRAWL SPACE, TUCKS AWAY WITH ACCESSIBILITY



IN UTILITY ROOM LEAVES USEFUL SPACE BELOW



IN CLOSET, LEAVES 5½ FT. FOR STORAGE

PROVIDE UP TO 5 SQ. FT. MORE USEFUL FLOOR SPACE

Here is the most adaptable and different gas heating unit . . . clean, simple, compact design that establishes a new standard in flexibility and economy . . . saves useful floor space, so important in today's trend to compact house designs. This greater freedom in unit placement for all types of buildings and construction can result in more economical installations whether for perimeter heating, conventional type layouts or the Janitrol Save-Way System utilizing constant air circulation with 4″ duct.

It is the inherent design combination of the famous Janitrol ribbon burner, multiple, heat exchangers that provide the basic principle that makes this Janitrol so universally adaptable, so far advanced of other gas heating equipment.

A typical 90,000 Btu. gas-fired conditioner measures 25″ x 27½″ x 65″, requires 4¾ Sq. Ft. of floor space, while the Janitrol FHS is less than 24″ high, 22″ wide, 40″ long, and requires no floor space. Units can be vented either side, burner and pilot adjusted from either side, ... the control train and gas connections, fan, limit control and electrical connections can all be located on right or left-hand side.

The Janitrol FHS is remarkably quiet, vibration free, with ample filtering area, design incorporates the many quality features that are standard with Janitrol construction.

Get complete specification and performance date on the new Janitrol FHS Units, for information that can help you provide more useful space and greater comfort in any type of floor plan. Write today.

®Janitrol

SURFACE COMBUSTION CORPORATION • TOLEDO 1, OHIO

Photos: top left, Dan Weiner; top right, Hedrich-Blessing; center row, Fred Stone; bottom, Royal Camera Shop

PRESSED STEEL CAR CO., HOUSE OF STRESSED SKIN PLYWOOD COMES IN THREE FACTORY-EQUIPPED SECTIONS HOISTED TOGETHER AT SITE BY CRANE

ACORN HOUSES OFFERED PORTABLE FOLDING HOUSE DESIGNED BY ARCHITECT KARL KOCH, TRANSPORTED AS AN 8' X 24' UNIT

GRESHAM CONSTRUCTION CO. AND KNOX CORP. OFFERED CARL BERGSTROM HOUSE THAT EXPANDS ON SITE BY PULLING APART GABLE ENDS

HHFA tests show demountable defense homes match fixed-site housing on cost, amenities

For six months, HHFA has been testing what it thinks is the happy medium between trailer camps and permanent housing for defense-area living: houses that are sturdy enough to be called permanent, yet so designed that they can be moved with a minimum of cost, time and wasted materials. The results, announced this month, provided important encouragement to people who wish the government would stop erecting eyesore "temporary" homes in areas where private defense housing cannot be built because the duration of need is too indefinite. Reported Special HHFA Adviser Ralph R. Kaul*, after watching nine permanent but relocatable homes disassembled, moved, and reassembled in tests by eight private firms from Massachusetts to California:

▶ "Relocatable housing is competitive in quality, liveability and cost with fixed-to-site housing of conventional construction" (*see table*).

▶ Relocatable housing can rent as reasonably as fixed-to-site defense housing on a private financing basis, such as FHA. (Kaul would like to see FHA embrace the demountable housing program, but writing mortgage insurance on a house that might be moved to another lot could require new legislation.) The average relocatable house of 852 sq. ft., costing $7,747, should rent for $73.37 a month on a $1,000 lot. This would permit a project of 100 homes to be amortized in 29 1/3 years under FHA formulae, with 4¾% interest, relocation of a quarter of the homes as much as 100 miles away, and a 75% write off for vacated land.

▶ If the same project were government-financed and built, the government's access to a cheaper (2¾%) interest rate would permit it to amortize 43% of its investment in only ten years. If the project then were sold to a private owner, the defense emergency having passed, he could amortize the remaining investment in 12½ years if he relocated a quarter of the homes. *Even if he had to move every single one of the houses,* the amortization period would be stretched only to 26½ years—with rents remaining at $73.37 a month.

▶ By figuring the total amortization span at 29 1/3 years, the government could afford to cut rents to $58.37 a month during its ten years of operation.

Comparative costs of the tested houses:

Company	Floor Area	First Location Dollars Per Unit	First Location Dollars Per Sq. Ft.	Relocation Dollars Per Unit	Relocation Dollars Per Sq. Ft.	Man hrs.
Acorn Houses, Inc.	804	$7,950	$9.89	$629	$0.78	159
Gresham-Construction Co.	798	8,450	10.59	836	1.08	204
Home Building Corp.	855	8,000	9.36	956	1.12	240
Mobilhome Corp...	1,045	8,250	7.89	678	0.65	154
Mobilhome Corp. split house	931	7,000	7.52	758	0.81	169
Nicoll Lumber Co.	858	7,000	8.16	864	1.01	197
Pressed Steel Car Co.	788	7,700	9.77	624	0.79	122
South Bend Fabricating Co.	768	8,570	11.16	997	1.30	247
Transa-Housing....	821	6,800	8.28	521	0.63	120
AVERAGES	852	$7,747	$9.18	$766	$0.91	180

* In "Relocatable Defense Housing," available from Supt. of Documents, Wash., D. C. for 25¢.

NOW! Do your construction fastening up to 100 times faster with REMINGTON STUD DRIVER ... and do it safely!

NEW CARTRIDGE-POWERED MODEL 450

This revolutionary tool attaches steel or wood structural pieces to concrete or steel surfaces in seconds . . . cuts costs and working time on construction jobs. Completely self-powered, the Stud Driver sets as high as 5 studs per minute . . . with no outside power source or other equipment required. And this rugged tool is built to last, yet weighs only 5½ lbs.

Test-proved to be the world's finest and speediest fastening system, the Model 450 Remington Stud Driver is made by Remington Arms Company, Inc., *America's oldest and foremost sporting arms manufacturer.*

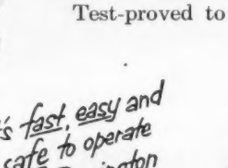
Read the facts on the amazing pull-out resistances of Remington studs in tests conducted by the United States Testing Co. Send in the coupon below for your free copy of this informative report.

It's fast, easy and safe to operate the Remington Stud Driver

"If It's Remington—It's Right!"

Remington

DUPONT

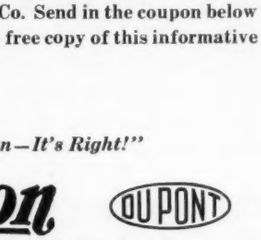


Simply hand-assemble stud and power cartridge, load as a unit in easy-to-open Remington Stud Driver, and close.

Press loaded Stud Driver firmly against surface, depress safety lever and pull trigger. Explosive charge imbeds stud solidly.

LISTED UNDER RE-EXAMINATION SERVICE UNDERWRITERS' LABORATORIES, INC. UL

Listed and approved by Underwriters' Laboratories



Industrial Sales Division, Dept. MB-7
Remington Arms Company, Inc.
939 Barnum Ave., Bridgeport 2, Connecticut

Send me a **free** copy of the full United States Testing Company Report.

*Name*_____

*Firm*_____

*Position*_____

*Address*_____

*City*_____ *State*_____

Housing sales hold up surprisingly despite some price cuts; Reg. X 'easing' no help

How were home sales across the nation? For a month, while the HHFA, VA and Federal Reserve wrangled over details, prospective buyers had hung on to their cash, awaiting relaxation of Regulation X. But the new rules (H&H, June '52) turned out to be so little different from the old credit curbs that builders cried they had been hoodwinked. Yet if sales were stymied by big down-payments how explain the paradox of housing starts marching along at a 1,100,000 a year clip?

Not bad, not good. Taking a closeup look at the housing market, HOUSE & HOME reporters talked to a cross-section of homebuilders in 15 major cities last month. On balance, they found sales sluggish, compared to last year and booming 1950. But it was the fringe area builder, the speculator with the outmoded model, the inefficient operator with the inflated price who were feeling the pinch worst. Savvy builders were not in trouble, though most had trimmed their production from last year to keep from getting ahead of their market.

Talk of a 250,000 overhang of unsold homes did not seem borne out by facts. In Pittsburgh, Executive Director William Hanna of the Allegheny County Home Builders Assn. admitted: "The NAHB figure of 2,000 homes unsold here is a little embarrassing. It was part of pressure to get rid of Regulation X. I'd say 1,000 is closer to correct."

Said big Los Angeles housing merchant Spyros Ponty: "Sales are good for the right type of house in the right location." In Cleveland, President Peter J. Negrelli of De Carlo Mason & Building Co. observed: "We used to sell them when they were just foundations. Now we don't sell them until they're plastered." In defense-booming Midwest City, Okla., W. P. "Bill" Atkinson, last year's NAHB president, said "sales have been good, except on houses over $10,000. I think the outlook is good, in spite of Regulation X."

Did easing help? Builders divided over whether the niggling changes made June 9 in Regulation X (for homes selling between $10,000 and $15,000) were stimulating sales. Most of them agreed with executive vice-president Otto Hartwig of the Long Island Homebuilders Assn. who said: "Sales are slowed because of Reg. X and the last change was almost of no value." But builder Manny Spiegel of New Brunswick, N. J. reported, "Our sales are improving since relaxation of Reg X."

It was possible that the scattered sales pickup was because the public was gradually realizing that the steel strike settlement plus local building trade wage increases spelled higher prices—probably within a few months. Said builder Andy Place of South Bend, Ind: "I have bet that after Sept. 10 materials will be harder to get than today and costs will go up."

Price cutting. It was clear the relaxation was more help to higher priced homes than cheap ones. Before it came, the position of housing sales in most cities was typified by Bridgeport, Conn., where Vice-President Gordon Christie of the Peoples Savings Bank observed: "For houses in the $12,000 range there's a fairly good market. In the $15,000 bracket it's sticky. In $17,000 and over it's definitely a buyer's market with buyers getting all kinds of reductions and extras." In Atlanta, builder B. A. Martin cut price tags on two homes in the $25,000 class by $1,500. Builder R. W. Johnson Jr., with a $23,750 house on his hands for three months, cut the price 7%. Roy D. Warren Co. reported it had slashed prices up to $2,000 on some of its $17,000 homes.

Production cutbacks. Price cutting was not so widespread as two other important trends caused by the straitjacket of Regulation X: 1) over 50% of the builders interviewed by HOUSE & HOME said they were curtailing production; 2) more and more builders were planning to build cheaper and cheaper houses to get back to the realm of low down payments. Samples:

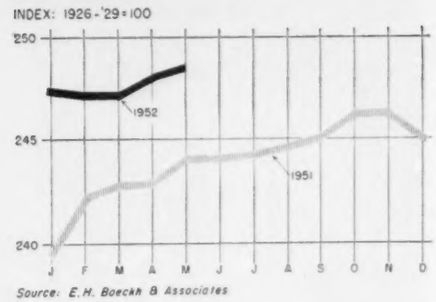
▶ Builder Spiegel, who built 200 homes in 1951, plans only 150 this year. He shelved plans for a tract priced from $17,500 to $20,000.

▶ In Pittsburgh, builder Harold Sampson built 600 homes in 1951 but plans only 300 this year. Said he: "We can build 14 houses a week but we've cut down to six. At that rate we've been able to sell them."

▶ Builder Joseph Kramer of Cleveland, who put up 14 homes in the $20,000 bracket last year, said he would complete only 12 in 1952. "I am figuring on going down to a lower bracket," he said. "The cheaper the homes, the faster they go."

For builders facing hard selling, little improvement was in sight. The strange formula for possible future relaxation of credit controls written into the Defense Production Act extension (*see p. 35*) promised to make wavering buyers waver still longer. It looked like a summer when builders would build warily.

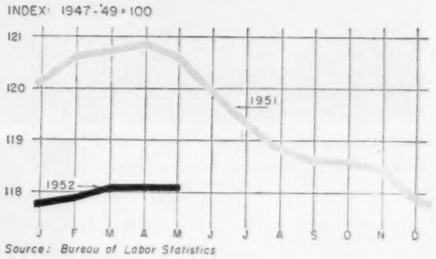
BUILDING COSTS RISE



Source: E.H. Boeckh & Associates

BIG WAGE INCREASES won by building labor in spring bargaining (*see table below*) were beginning to make overall building cost indexes shoot up again last month. Boeckh's residential index, for instance, climbed from 248.1 in April to 248.7 in May (*above*). The steel strike settlement was considered sure to bring a price increase in steel that will be multiplied manyfold as its effects filter through the building materials industry.

MATERIALS PRICES STEADY



Source: Bureau of Labor Statistics

WHOLESALE PRICE INDEX of all building materials compiled by BLS has not fluctuated more than 0.4 points all year. In May, it stood at 118.1—some 2% below the 120.7 mark in May '51.

Lumber and plywood markets remained uncertain. Green douglas fir dimension No. 2 was off $4 on transit cars and some lower grades dropped up to $10.

RECENT WAGE SETTLEMENTS

City	Trade	Wage Increases: Raise	New Scale	Welfare: Raise
New York	17 bldg. trades	15¢	to $2.05-$3.40	
	carpenters, hoisting engineers	25¢	to $2.95	5¢
Chicago	brickmakers	9¢	to $1.65-$1.88	
	carpenters	25¢	to $2.95	
	laborers	15¢	to $2.14	
	hoisting engineers	15¢	to $2.80	
	pipe fitters, plumbers	25¢	to $3.00	
Detroit	painters	15¢	to $2.62½	
	plumbers, pipe fitters	12½¢	to $2.82½	
	asbestos workers	13¾¢	to $3.02	
	marble masons	15¢	to $3.05	
	sheetmetal workers	15¢	to $2.78½	
	iron workers	10¢	to$3.00	
Milwaukee	plasterers, lathers	15¢	to $2.90	
	plasterers' laborers	13¢	to $2.33	
	plumbers' laborers	7¢	to $2.38	
	sheetmetal workers	10¢	to $2.63	
Newark	bricklayers	40¢	to $3.65	
	hodcarriers	15¢	to $2.35	
	carpenters	35¢	to $3.20	
San Francisco	carpenters	15½¢	to $2.60½	7½¢
Los Angeles	carpenters	22¢	to $2.57	
	cement masons, teamsters, laborers	19¢	to $1.94-$2.94	
Philadelphia	plumbers	42½¢	to $3.17½	
New Orleans	carpenters	20¢	to $3.06	
Cleveland	excavators, bldg. supply drivers	7½¢	to$3.00	7½¢

AIA conventioneers

The unofficial, after-hours curriculum of the American Institute of Architects' 84th annual convention last month was devoted mainly to a rediscovery of the city where the Institute had been born almost a century before. It had been 25 years since the architects had last met in New York, and both parties made a big thing of it. New Yorkers called it "Architects' Week." And the visting architects pushed happily out of the air-cooled Waldorf-Astoria into the hottest June weather the city had seen in years, to do the town and view the sights (*see pictures, left*).

Back inside the Waldorf, after the sight-seeing trips were over, the delegates settled down to a convention that ran smoothly and without controversy. Only one serious wrangle had been expected; Harvard's Walter Gropius intended to propose that the Institute's by-laws (which now prohibit the member architect from engaging in construction work) be amended in order to permit the architect to become a "master builder." (For detailed view of Gropius' stand on this matter, see June '52 AF.) But through parliamentary tactics the convention leadership managed to table this resolution, and it never got to the floor for discussion.

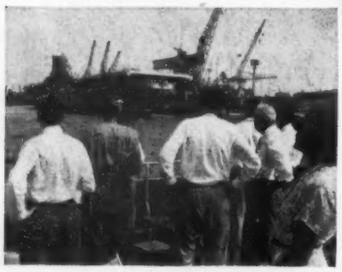
The convention's official agenda was dedicated primarily to heavy architecture, in keeping with the convention's twin themes: the reunion of architecture and engineering, and the design changes that have become necessary with the growth of the automobile

Sight-seeing architects see the New York skyline . . .

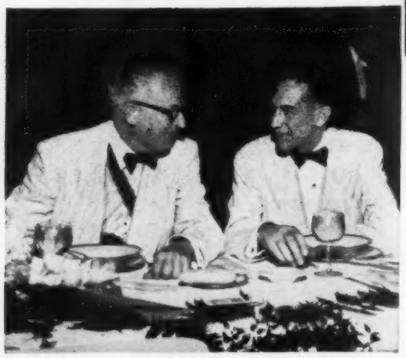
. . . the Cloisters

. . . the United Nations Building

. . . the SS United States



. . . the Brooklyn Navy Yards



Photos: Roy Stevens

Above: *President Glenn Stanton, flanked by the Board of Directors, opens the convention's first business session.*

Left: *President Stanton with Deane W. Malott, president of Cornell University, speaker at annual banquet.*

spend hot but tranquil week in New York: Gropius' 'Master Builder' plan is sidetracked; public-housing endorsement is reaffirmed; cooperation with homebuilders is restated

age. This latter theme inspired mostly discussion of off-street parking and loading, but it did touch house design in one direct way. Pike Johnson, president of the Automotive Safety Foundation, passed on to the delegates this opinion from four top automobile men*: with the recent increase in multiple car ownership (12% of the car-owning families—twice as many as in 1949—today own two or more automobiles), more houses will have to be designed for multiple car garages.

In other ways the delegates turned their attention to housing matters: they reaffirmed the Institute's endorsement of public housing (*see p. 37*). And they listened to a solemn warning reminder from their Board of Directors that the small, merchant-built house still suffers from "lack of (architectural) participation." The Board reminded its members that there still exists the cooperative committee which AIA formed with the National Association of Home Builders two years ago in an effort to bring architectural services into the small house field. But, noted the Board sadly, that joint effort "at times appears to have received the more enthusiastic support of the operative builders than of ourselves."

In business sessions, the convention:

▸ Upped maximum annual membership dues from $40 to $50 to set up a three-year, $36,000-a-year public-relations program. Francis J. McCarthy, retiring president of the northern California AIA chapter and member of the committee which recommended the PR program, explained why it was necessary: "The architect is an unknown man, even in his own local community. He is seldom in the ranks of community leadership. He is battered by adverse legislation and criticism. He faces encroachment on architecture from consultants, industrial designers, contractors . . . who are taking away from the architect designs that should be his." Seconded Harold Sleeper, former president of the New York AIA chapter: "We don't have 50% of the work we could have. But people don't know there are things we can do better than anyone else."

▸ Authorized AIA to provide a reference file to help architects write specifications.

▸ Heard Dr. Edwin S. Burdell, president of Cooper Union and chairman of the AIA Commission on the Survey of Education and Registration, warn that "the lay public will sooner or later be unable to distinguish between the claims of a truly professionally trained man and a product of . . . vocational schools" which "offer technical courses in design, to say nothing of drafting, specification writing, etc." The answers to this problem, Burdell said, lay in inducing more students into architectural schools and in perfecting architectural education. One recommendation Burdell had for the AIA: promote postgraduate architectural education; "there is no agency now . . . exploring the need for such education, yet 92% of the profession has expressed the desire for it."

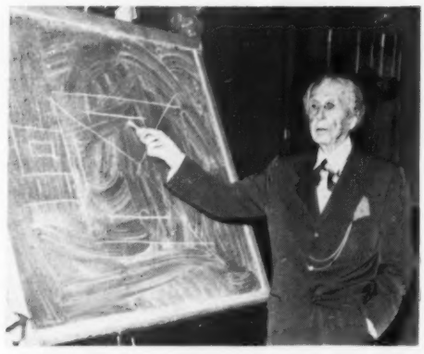
▸ Re-elected its same slate of officers: Glenn Stanton, Portland, Ore., president; Kenneth E. Wischmeyer, St. Louis, and Norman J. Schlossman, Chicago, vice-presidents; Maurice Sullivan, Houston, treasurer; and Clair W. Ditchy, Detroit, secretary.

* Harold Vance, president, Studebaker Corp.; Henry Ford II, president, Ford Motor Co.; George Mason, president, Nash Kelvinator Corp.; L. L. Colbert, president, Chrysler Corp.

← **Candle-lit tables** *gave convention lunch session festive glow. Speaker Ernest T. Weir, chairman of National Steel Corp., blamed government intervention for steel strike.*

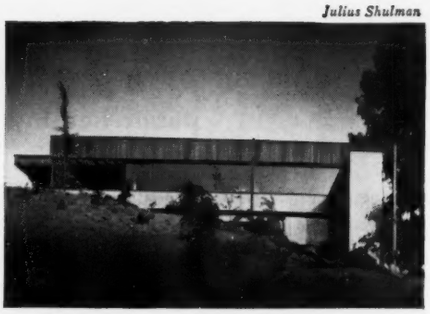
Craftsmanship Medal *was awarded for first time to a furniture designer and maker: George Nakashima (right), of New Hope, Pa. (See H&H, Mar. '52.) Judges found that Nakashima, second generation Japanese American, had blended "the handcrafts of Japan and the traditional forms of western furniture" with "the anti-industrial moral ideas of the English rebel William Morris."*

Next to Nakashima: Marshall Fredericks, Detroit sculptor, who was awarded AIA's Fine Arts Medal for his special interest "in the development of sculpture in relation to architecture and in effective colloboration between the arts."



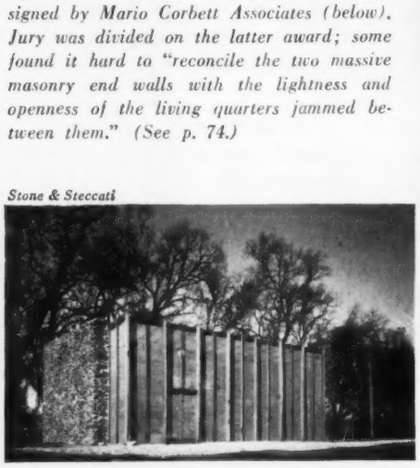
Frank Lloyd Wright *outlined for an alternately cheering, rapt audience of students the long war he has conducted on "the box" as an architectural form: "It is a fascist symbol, a symbol of containment, not fit for democracy. . . . Now comes an ideal of freedom, the worth of the individual. How to express that in architecture? I found a key to liberation from the box (in organic architecture). . . . But modern architecture seems to be committed to bringing back the box. Why? Why did the box have to come back and be put on shining legs? Why, when democracy is the great contribution America has made to the modern world?"*

Julius Shulman



Awards of Merit *were given a Los Angeles house designed by Richard J. Neutra (upper right), a 500-home community in Brentwood, Calif., planned by Whitney R. Smith, A. Quincy Jones and Edgardo Contini (lower right), and a northern California house designed by Mario Corbett Associates (below). Jury was divided on the latter award; some found it hard to "reconcile the two massive masonry end walls with the lightness and openness of the living quarters jammed between them." (See p. 74.)*

Stone & Steccati



'SCRAP THE ARCHITECTS': Levitt stirs heat with claim that builders can do the job alone

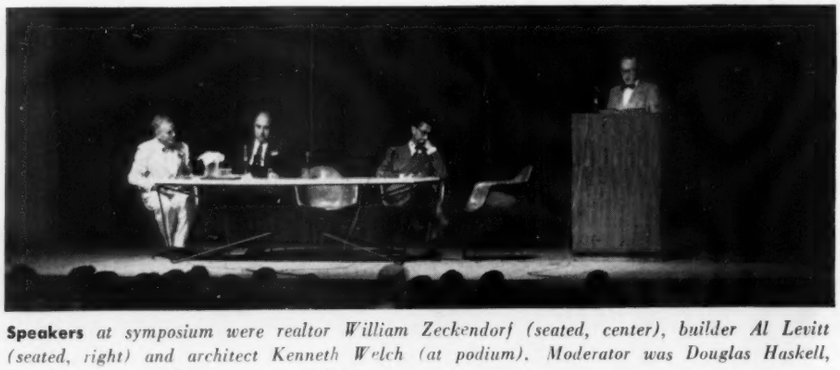
The liveliest debate of the convention was touched off by a speech of mass-designer Al Levitt's, in a symposium in the Museum of Modern Art. Excerpts from Levitt's remarks, and some of the comments that followed, are given here.

Levitt: The noncompromising attitude of high skill in detail that 99% of architects insist on is unrealistic. Take, for example, the first problem that practical housing people must face. . . . Mass housing means that you must have mass labor. There aren't many skilled men in the US, so that our plan is predicated on the thought that the fabricators are going to be (unskilled.) This at once throws out all the high skill . . . all the delicacy of Mr. Mies van der Rohe's highly polished steel, all Mr. Frank Lloyd Wright's beautiful execution of brickwork in which every brick that is chipped or has any imperfection is cast away.

The second conception is that no businessman who makes and sells a product long stays in business unless the public buys his product. How far to go in pleasing them is a very delicate matter. Without even a trial balloon you guess in advance just how far you can push and persuade them to take either open planning or living in a fish bowl until the landscaping grows to give them privacy on the comparatively small lots on which we must build.

Probably the trouble with the architects is their gross impatience; they would like to see their dreams come true, but don't know how to attain them. Our best hope is to scrap the architects and get the live, alert, successful small and large builders and give them training, not more than a year. More could be done to the face of America by a few hundred builders who have a few simple explanations than can be done by all the thousands of architects because the architects are not in touch; they have no control over the millions who are buying and building.

Roy Stevens



Speakers *at symposium were realtor William Zeckendorf (seated, center), builder Al Levitt (seated, right) and architect Kenneth Welch (at podium). Moderator was Douglas Haskell,* THE MAGAZINE OF BUILDING *(seated, left).*

Voice from Audience (O'Neil Ford): I resent very much Mr. Levitt's very careless and slighting way of talking about (Frank Lloyd Wright). When Mr. Wright is dead 100 years from now he will still be thought of as having contributed something quite great to this world, and Mr. Levitt will be just a dead millionaire.

Levitt: Can you imagine that if Mr. Wright had never thought of being another Leonardo but had thought of being a speculative housebuilder —and had he devoted the talent that that man has to the problems that I devote myself to— can you imagine where small houses might be today?

Voice: To whom are the builders going to school? Where are they going to get training?

Levitt: To the inspirational architects that started work in 1900. (And) you have it all in the textbooks.

Voice (Walter Gropius): Why shouldn't it be the other way around, that the architect learn a little bit more about building? Wouldn't that work?

Levitt: I'm afraid it wouldn't. [Here Levitt described the executive talent necessary to mass-produce houses.] That talent displays itself in all those phases that architects are not trained in and weren't given an inheritance in—such as money.

Moderator Douglas Haskell summed up the issue that had emerged from the debate: "The creation of exceptions, everlasting exceptions, and thereby the broadening of human experience, is the preeminent job in society of the great architect—that constant exploration. Now, then, how to bring that into play alongside of the practical knowledge and skill of men who are taking over because they are out-competing other people in our competitive society? It is not something to dismiss with just heat. These two factors have to work together.

. . . What is it that people want? What is it that people need? I don't know that anybody has a tremendous right to say that he knows. So I think if we can get more people searching together, it will be an advantage.

PEOPLE: Gropius resigns from Harvard; Greene named new FHA chief; Kamrath scores FHA design appraisals

Architects had no sooner put their convention bags down in Manhattan than they learned **Walter A. Gropius** was resigning his job as chairman of Harvard's school of architecture. In Gropius' 14-year reign, Harvard has become one of the nation's finest architectural schools. And the former impresario of Europe's famed Bauhaus was not due to retire until next year. Explained Gropius: Last year Harvard cut his staff from 13 to 10 by making no replacements; last month, the university lopped off another three aides, ordered a fourth transferred from assisting Gropius with his "master course," and discontinued Design I, Gropius' pet first-year course on materials, color, descriptive geometry. At 69, Gropius felt the resulting personal work load would be too much.

Behind the staff cuts lay a June 13 order from President Conant requiring a drastic reduction in the school's budget. Inflation had cut its income in half and Harvard policy is that each school must be self-sustaining. Since **Joseph Hudnut,** dean of Harvard's faculty of design (who was to have resigned this year), will remain another year as dean, it was a safe bet there would be a shift in emphasis at Harvard architectural school. Gropius believes in anticipating the architectural needs of an industrial civilization by making the architect the leader of a team embracing engineers, manufacturers, contractors. Hudnut, critic and historian and once a strong champion of modern architecture, recently grown increasingly squeamish about industrialism as such, pictures modern architects as mere technocrats, idealizes the individual architect as an individual artist, speaks with fond rotundity of his favorite Georgian age & architecture. Gropius, retiring with full pension, will devote full time to his private practice, The Architects Collaborative. Among his chief Harvard associates, **Richard Filipowski,** instructor in design, goes to MIT as an assistant professor, and **Norman C. Fletcher,** assistant in architecture, will return to The Architects Collaborative.

Addressing his local real-estate board, Houston architect **Karl Kamrath** acknowledged the FHA "has improved slowly in its architectural outlook but still has a long way to go." Commented Kamrath: the FHA "is a little tardy and inclined to hold back on appraisals on contemporary home designs because they are not the standard six or seven of all other homes in a subdivision. The FHA is not always giving the appraisal an even break and year after year has a tendency to knock it down." The result, said Kamrath, is that builders by-pass originality in favor of tried-and-true design.

Almost within days after FHA Commissioner **Franklin D. Richards** announced he was leaving government to open his own Washington D.C. mortgage firm, President Truman nominated a successor: **Walter L. Greene,** 61, deputy commissioner for the last five years. As a man who already has 19 lines in *Who's Who* and who told a breakfast companion two years ago, "If everything works out the way I expect it to, I'll be commissioner in two years," Greene took the promotion in his stride.

GREENE

RICHARDS

The FHA's new boss is a native of Owingsville, Ky., worked in Florida from 1915 to 1928 as bank cashier, auditor and executive secretary of the Miami Realty Board. He joined FHA at its birth in 1934, worked up from the Birmingham office to western zone commissioner (1937-'46), to deputy commissioner.

Gray haired, bespectacled, immaculately groomed, Greene could be taken for a deacon. His Florida friends remember him for personally pushing through a 15-story, $650,000 Miami office building and for insisting the Miami Real Estate Board spend $50,000 on an advertising campaign to counteract the approaching Florida land boom—thereby displaying one of the few level heads in that disastrous sea of enthusiasm. Reserved and abstemious ("I've seen him nurse one highball all evening," one Florida realtor recalled), Greene was known as an extremely hard worker in Miami. Time away from the office was devoted to raising flowers and fruit trees. While homebuilders welcomed Greene's appointment as commissioner, a few detractors said the uncertainty of who is to become the next White House tenant has made the FHA job unattractive to outside talent.

To a Manhattan symposium, Realtor **William Zeckendorf** disclosed that he no longer plans to build his revolutionary circular helix apartment (Jan. issue '50) atop San Francisco's Nob Hill. Instead, he plans to spot one helix atop each peak on an 11,600-acre tract he owns in the Santa Monica mountains at Los Angeles, leaving the surrounding rugged hillsides and canyons as a rustic park. "Because you can put 135 families on a mountain top," explained Zeckendorf, "you can afford to carry the road and the utilities that go with it and yet . . . the [residents] can have a life that is quite different and apart from the conventional southern California existence."

Morton Bodfish, US Savings & Loan League's executive committee chairman, suffered seven broken ribs and head cuts when his horse bucked him off and down a 50′ embankment on Rancheros Vistadores at Santa Barbara, Calif. He spent seven days in a nearby hospital before returning to his Chicago office.

At their annual meeting on St. Simons Island, Ga., the Southern Plywood Manufacturers Assn. elected **V. L. Toussaint,** head of Perry County Plywood Corp., Hattiesburg, Miss., as president. SPMA's Washington counsel, **Robert N. Hawes,** urged restoration of the 1950 plywood tariff cut as a means of fighting the increased importation of hardwood plywood.

Growing with prosperity, the NAHB added three officials to its Washington staff: **Jerry Madigan,** 38, former executive director of the Home Builders Assn. of Greater Cleveland, to be field service director; **Joseph B. McGrath,** 30, former Justice Dept. attorney, to be assistant legislative director; and **Everett E. Revercomb,** 38, formerly with the National Assn. of Radio and Television Broadcasters, to be comptroller.

DIED: **Vernon M. Hawkins,** 67, former vice-president of the National Retail Lumber Dealers' Assn., June 13 in Boston; **John H. Rankin,** 83, whose 54 years of practice earned him the title of dean of Philadelphia architects, June 19 in Philadelphia; **R. E. Lee Taylor,** 70, former president of the Baltimore AIA.

NAMED: **Frederick P. Clark,** of Rye, N. Y., as president of the American Institute of Planners; **Edward H. Shirley,** of North Carolina State College, as recipient of the 1952 Lloyd Warren architectural scholarship to Paris; **Carl D. Franks,** veteran executive of the Portland Cement Assn., as the PCA's executive vice-president.

"See what's waiting for me...

happy family—happy home!"

This scene is as American as apple pie... a healthy, happy family... an easy-to-live-in home, with a kitchen finished in beautiful, lifetime Mosaic Tile.

Mosaic Tile does so much for the cheery, efficient home of today. In kitchen, bath — and in other important areas, indoors and out — no material adds such beauty, assures such easy maintenance, wears so long — or gives so much for the money!

When you plan a new home or remodel an existing one, use Mosaic Tile. For quick facts, consult your nearest Mosaic office. For helpful literature on the many types of Mosaic Tile — write Department 29-10, The Mosaic Tile Company, Zanesville, Ohio.

See our catalog in Sweet's

Branch Offices

Atlanta, Georgia
780 Ponce de Leon Place
Phone: Elgin 0754

Boston, Massachusetts
384 Main Street, Waltham 54
Phone: Waltham 5-7292 & 5-7202

Chicago 51, Illinois
3712 LeMoyne Street
Phone: Capital 7-5120

Denver 4, Colorado
1325 W. 9th Avenue
Phone: Alpine 0239

Detroit 34, Michigan
20230 Sherwood
Phone: Twinbrook 3-1254

Hollywood 38, California
829 North Highland Avenue
Phone: Hillside 8238

Little Rock, Arkansas
1709 East 9th Street
Phone: 5-7251

Miami, Florida
7250 N. E. 4th Court
Phone: 89-4329 & 89-8812

New York 17, New York
101 Park Avenue
Phone: Murray Hill 3-2768

Philadelphia, Pennsylvania
6229 West Girard Avenue
Phone: Granite 4-7116

Portland 14, Oregon
43 S. E. Salmon Street
Phone: Fillmore 3717

Salt Lake City 8, Utah
560 Gale Street
Phone: 9-8285

For Free Estimates on (MOSAIC) Tile, see your phone book for the name of Your Tile Contractor (Ceramic)

Mosaic Wall Tile Color 102,
work counter and trim Color 181.
Floor — Unglazed ceramic Mosaics,
Special Design No. 24.

THE MOSAIC TILE COMPANY

San Francisco, California
245 Loomis Street
Phone: Valencia 6-3924

Seattle 4, Washington
538 First Avenue, So.
Phone: Mutual 2213

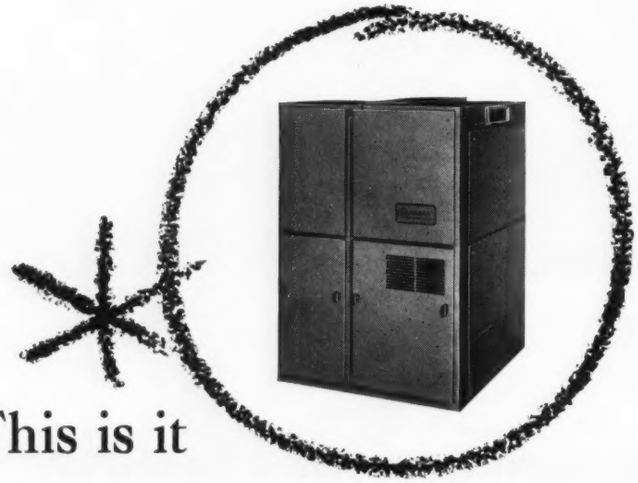
Washington, D. C.
P. O. Box 32, Fairfax, Virginia
Phone: Fairfax 144

MOSAIC®

(Member—Tile Council of America)

Offices, Showrooms and Warehouses across the nation
Over 4000 Tile Contractors to serve you

If you put this in the next house you design, you all these advantages



This is it

And,

This is the Carrier Weathermaker Air Conditioner.

You can put it in ANY *new house and many old ones.*

It is designed for a duct system like that used for forced warm air heating.

The Weathermaker cools and heats. It burns gas for heating . . . uses a sealed electric refrigerating unit for cooling. It is only a little larger than an ordinary furnace.

It can fit in a space not much bigger than five by four feet. It can be installed in attic, basement, utility room, closet, under the stairs, in the garage, anywhere.

Carrier Weathermaker can give your client of a Carrier Weathermaker Home

1. You give him year-round comfort, independent of outdoor ventilation, with the Carrier Weathermaker that heats and cools.

2. You save him the cost of wings and jogs with a simple rectangular floor plan.

3. You save him money by eliminating louvers, screens, porches, attic fans.

4. You save him money by setting glass in simple frames, with no sash, no weatherstripping.

5. You save him money by planning exposures, overhangs and shade trees to reduce the cost of heating and cooling.

6. You save him space by locating bathrooms in the interior.

7. You give him more freedom of furniture arrangement by placing some windows high on the wall.

8. You give him privacy by leaving windows off the wall facing the street, or nearest to his neighbors.

9. You give him more outdoor living space because the walls without windows can be placed close to the lot line.

10. You give him a feeling of interior space by grouping the windows.

11. You give him more closet space by using solid exterior walls for storage.

12. You give him the most of a good view by having floor to ceiling windows that aren't grayed down by screens.

13. You give him better natural light by placing some windows high on the wall, or on the wall which gives best light.

14. You give him a better looking house because you leave off the casements, louvers and vents usually needed to flank picture windows.

15. You give him more convenience because you planned the interior with that end in mind, unhampered by any need for outdoor air circulation.

16. You give him . . . for about the same money an old-fashioned house would cost . . . a Carrier Weathermaker Home. A modern, completely air conditioned house . . . a house built from the inside out . . . with all the advantages we've talked about.

chances are, you can add to them

Carrier

AIR CONDITIONING • REFRIGERATION

For 50 years—the people who know air conditioning best

CARRIER CORPORATION

313 S. Geddes Street, Syracuse, New York

Please send me "How to Have a Carrier Weathermaker Home."

NAME_____

STREET_____

CITY_____ STATE_____

TILE SPECIFICATIONS FOR THIS WORK-SAVING KITCHEN ARE:

Floor—Olean CB-638 Sand Grey, Light and Dark Olive Textone, Black
Border—4¼—#15 Sylvan Green
Walls—4¼—#38 Butternut
Ceiling—4¼—#11 Ivory
Counter Top—Medium Green, Pastel Green, and Canary Shadowflash

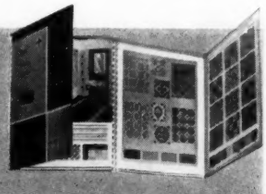
You Add Sales Appeal... Assure Owner Satisfaction

when you specify American-Olean Tile

Here is ceramic tile with matchless advantages no other surface offers. Acids and alkalies that ruin ordinary surfaces wipe off A-O tile as easily as off a china plate. Wear can't mar its beauty, nor can sun, soap and time fade its fresh, clean colors.

Installation is simple, fast and easy. A-O tile is accurate in size and all shipments are expertly color blended.

• At these blending boards tiles are compared and sorted . . . carefully graded for color . . . just another reason why you can be sure of complete satisfaction with American-Olean tile.

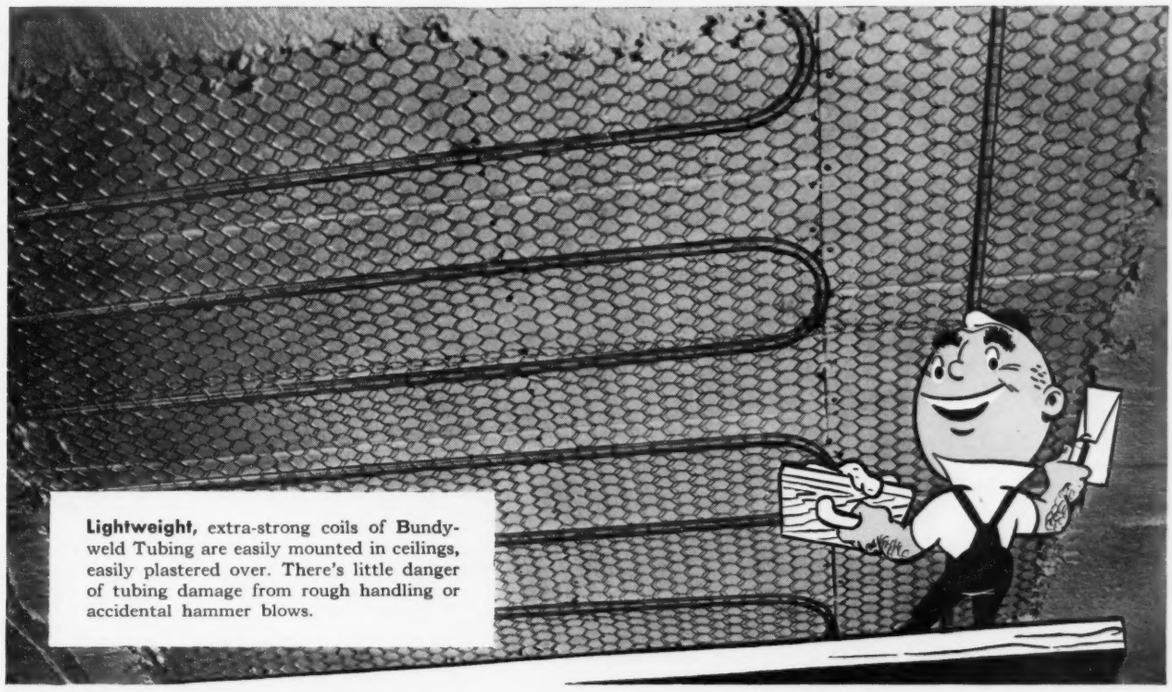


***FREE!* The Color Book of Tile**

Quickest, Easiest Way to Specify Tile—100 pages, including 30 of typical installations in full color; plus color charts of wall and floor tile, trim and hand-decorated inserts. Ready-to-use specifications. Write on your letterhead if you would like a copy.

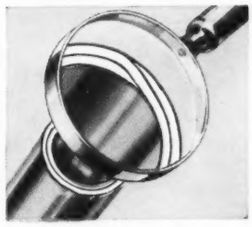
AMERICAN-OLEAN TILE COMPANY

Executive Offices: 920 Kenilworth Avenue • Lansdale, Pennsylvania



Lightweight, extra-strong coils of Bundyweld Tubing are easily mounted in ceilings, easily plastered over. There's little danger of tubing damage from rough handling or accidental hammer blows.

Put your houses years ahead with Bundyweld ceiling radiant heating



Key to Low Cost

Bundyweld is the only tubing double-walled from a single strip, copper-brazed through 360° of wall contact. It's leakproof, thinner walled, yet stronger. It transmits heat quickly, has high bursting strength. It saves up to 50% on material costs and installation time.

Standard 20′ or 24′ lengths of Bundyweld are easily formed into coils in shop or on job site. Expanded ends (furnished when specified) are quickly soldered into leakproof union. Joined, lightweight coils are easily mounted onto ceiling, quickly plastered over.

Interest in this newest, most practical method of heating a home widens daily. Present users hail it enthusiastically. Prospective home buyers demand to know more about it.

To thousands, Bundyweld ceiling radiant heating has already proved a cleaner, more economical, more convenient way to heat. They in turn are selling friends on the idea of walls without dirt streaks, of warmth that's always even, of air that's fresh as spring.

But the biggest boom is coming from Bundy ads in *American Home* and in *Better Homes & Gardens.* People who are planning to buy a home now or later are sending in an avalanche of coupons. They want to know more about Bundyweld ceiling radiant heating. They want to know the names of builders and architects using it. These people are *your* prospects!

Why not place your houses squarely in the middle of this interest? Why not put your homes ahead of all competition for years to come? Send the coupon!

Bundyweld
ceiling radiant heating

Radiant Heating Division
BUNDY TUBING COMPANY
Detroit 14, Michigan

Radiant Heating Division, Dept. MB-652
Bundy Tubing Company, Detroit 14, Michigan

☐ Send free 20-page nontechnical brochure explaining Bundyweld ceiling radiant heating.
☐ Send Bundy technical radiant heating pamphlet.

Name_____ Title_____

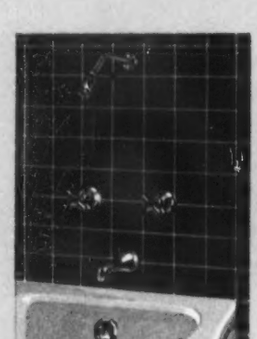
Company_____

Address_____

City_____ Zone____ State_____

AND BRIGGS FIXTURES OF FORMED STEEL . . . . OR VITREOUS CHINA PUT EXTRA VALUE IN ANY HOME!

Yes, it's quality—striking modern beauty combined with proved durability—that sells Briggs Beautyware! Home owners know that they can be proud to have visitors see these luxury-styled plumbing fixtures in their bathrooms. Briggs Beautyware *looks* expensive—recently redesigned and restyled, its smart, new lines and smooth, flowing contours give it an unmistakable mark of quality. Your customers are finding out that the stain-proof, acid-resistant luster of Briggs Beautyware just won't wear off! Dependable Briggs Beautyware fixtures retain that "just like new" look through the years. That's why they're first choice among discriminating home owners everywhere. Cash in on the established sales appeal of Briggs Beautyware!



The high quality of Briggs Beautyware chromium plated brass fittings has long been well known throughout the plumbing ware industry. Like every other feature of nationally advertised Briggs Beautyware, these fittings are today maintained at the same high level of workmanship which has always distinguished them.

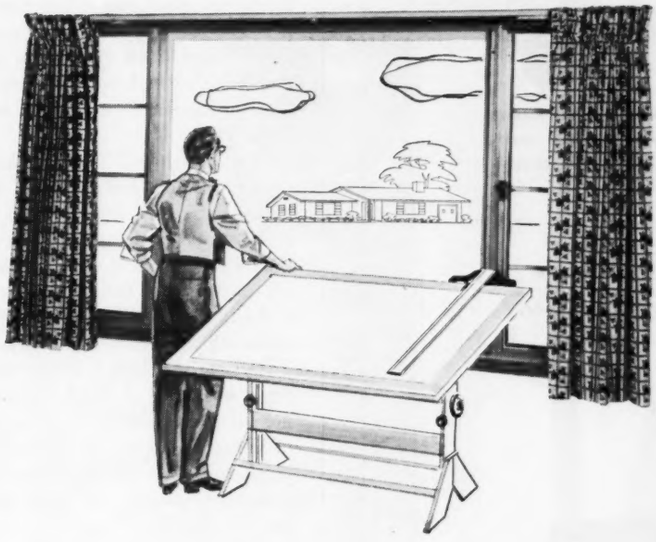
Briggs Beautyware vitreous china lavatories are built to the same exacting specifications that have been traditional with Briggs fixtures from the very start. Briggs is proud that any modifications in its products have always been made with the object of *improving* them. This basic Briggs policy is unchanged today.

Closets, too, are the finest that Briggs has ever manufactured. Engineered for speedy, efficient installation, these sturdy fixtures have proved themselves trouble-free in thousands of American homes.

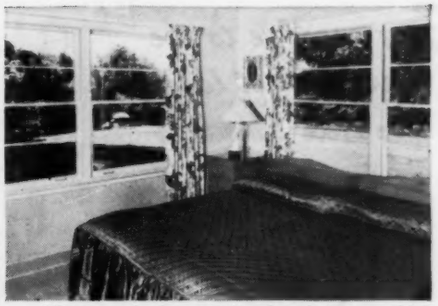
BRIGGS MANUFACTURING CO. • 3001 MILLER AVE. • DETROIT 11, MICH.

© 1952

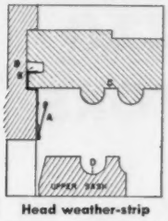
THE WINDOW THAT LOOKS *to the future*



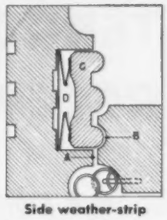
There is one type of window that has never stood still in offering important improvements and advantages to you and your clients. It is Curtis Silentite—the window that is constantly being studied and tested to improve still further its ease of operation, weather-tightness and other features that provide increased value. At the right are some reasons why:



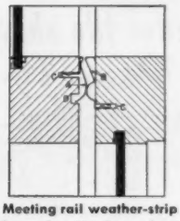
These are the famous Silentite windows—which we believe are the most weather-tight double-hung windows made. A glance at their construction will show you why.



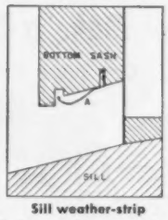
Head weather-strip



Side weather-strip

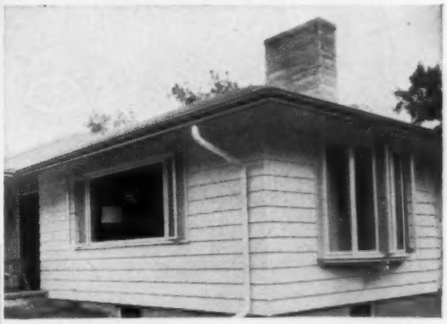


Meeting rail weather-strip

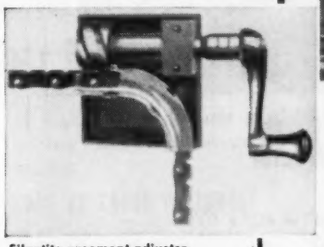


Sill weather-strip

These details show the built-in weather-stripping of the Silentite double-hung wood window. The sliding bars are supported by double "Z" spring leaf-type weather-strip, providing uniform pressure on both sides of the window, yet permitting unusual ease of operation. The Silentite spring suspension eliminates weights and cords. Spring leaf weather-strips are used at head, meeting rail and sill to provide complete protection.



Silentite wood casements can cut total heating cost in the home as much as 16%. Silentite casements are supplied with insulating glass and screens. Operation is exceptionally easy—the adjuster provides 15 times greater opening pressure than the lever type. No inside projecting hardware—no hardware visible outside when sash is closed. Several sash styles are available. These are one-light casements.



Silentite casement adjuster.

Curtis makes a complete line of architectural woodwork and kitchen cabinets for the modern home. Make your next house "all Curtis."

1865 CURTIS WOODWORK
SILENTITE PRE-FIT
the *insulated* window

Curtis Companies Service Bureau
MB-7 Curtis Building, Clinton, Iowa

Gentlemen:

I want to know more about Curtis Silentite Windows. Please send me your free window booklet. I am ( ) architect, ( ) contractor ( ) prospective home builder, ( ) student. (Please check above)

Name.....

Address.....

City.....*State*.....

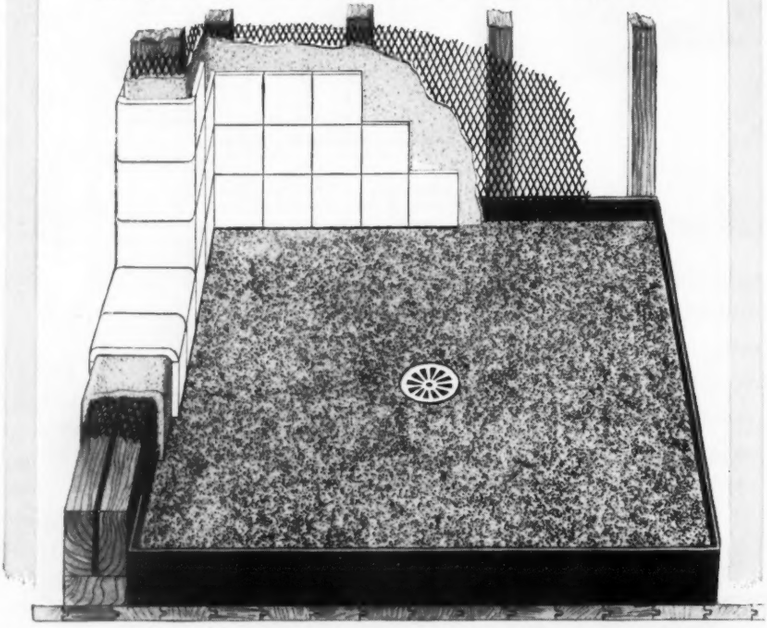
Say goodbye to the hard-to-get lead pan for Tile Showers

FIAT PRECAST TERRAZZO RECEPTORS

I find Fiat precast receptors make a definite saving in building tile showers.

Save money . . . Save time . . .
Make a better tile shower floor . . . . . .

One piece slab construction gives a lifetime leakproof floor.



Available for prompt delivery
See your plumbing contractor

STANDARD SIZES:

Square type 32" x 32" — 36" x 36" — 40" x 40"
Corner type 36" x 36" — 40" x 40"

The Fiat one piece precast receptor slab will not be affected by settlement of the building as would the old-fashioned "multi-layer" construction of fill, lead pan, grout and tile. The rustproof metal receptor flange encases the tile walls making a leakproof connection.

FIAT

FIAT METAL MANUFACTURING COMPANY

Three Complete Plants
9301 Belmont Avenue, Franklin Park, Illinois
Long Island City 1, N. Y. Los Angeles 33, Calif.

In Canada—Fiat showers are made by Porcelain and Metal Products, Ltd., Orillia, Ontario

LETTERS

WILL-O'-THE-WISP

Sirs:

I subscribed to HOUSE & HOME because for years now I have followed that will-o'-the-wisp —the hope that America would produce a magazine devoted to architecture and furniture which would not be biased by the cultural inferiority complexes that seem to be inevitable with this type of magazine.

It is true that you are surveying the building panorama; it is true that your findings include work that is valid and rational and typical of American architecture today; but it is also true that editorially you are slanted toward unjustified enthusiasm for the work now being carried out in America by the one time professors of the German design schools of the '20's.

That you should illustrate this work is, of course, obvious and justified, but that you should describe it with the gush of adolescent architectural students is ludicrous. That you should be allowed to do this indefinitely without protest from the architectural profession is, I suppose, possible in view of its record of imported eclecticism in the past.

As I am sure only criticism in the broadest sense would be of any interest to you, I am not bringing up the matter that in your issue of January 1952 you illustrated in full color a house furnished with furniture of my design without mentioning my name or the name of the manufacturer.

T. H. ROBSJOHN-GIBBINGS
New York, N. Y.

Sirs:

For months I waited to see the course your publication would take, but through middle-of-the-road policy, it has been reduced to the realm of a mediocre builders' magazine.

As a designer I find the articles generally more for a layman's limited knowledge than for the profession. Unless you change your policy the younger architects will find other publications that dwell more on art and architecture than on the pounds of nails in a 550 sq. ft. residence.

E. ABRABEN, *Designer*
Norfolk, Va.

ADVERTISING PRO AND CON

Sirs:

I want to express my gratitude for and appreciation of your new magazine. Unfortunately the art of advertising has not reached the high point that house-design has. Your format is excellent.

WARREN TRUITT
Somerville, Mass.

TALIESIN BUILDING FUND

Sirs:

I have noted the tragic news of the fire at Frank Lloyd Wright's Taliesin.

Enclosed is a check for $10, with the pro-

(Continued on page 56)

The kids aren't kidding... "SLIDE-EASE" is America's NEWEST, LOWEST-PRICED SLIDING DOOR

(★ *Several choice distributor territories available*)

LOWEST PRICE DOOR ON THE MARKET!
ONLY 15 MINUTES TO INSTALL!
SMOOTHEST THING ON WHEELS!
ALL YOU NEED IS A SCREWDRIVER
FULLY GUARANTEED

Made by America's Largest Sliding Door Manufacturer

● SLIDE-EASE is the perfect answer to your closet construction problems. Available in either masonite or plywood, the new Slide-Ease sliding door is the lowest priced door on the market . . . the simplest to install! One man, plus one screwdriver, plus 15 minutes, equals installation. With these superior door packages you also get the famous SLIDE-ALL hardware that has been used by the country's leading builders in more than 200,000 installations. Slide-Ease doors can be painted or wallpapered and are available in a variety of sizes to meet all requirements.

LOOK AT THESE FEATURES!

- *Completely guaranteed*
- *Both sides edged in steel*
- *Simplest to install...only 15 minutes*
- *Adjustable levers*
- *Complete package includes doors, overhead track with ball bearing rollers and grooved oak saddles.*

U. S. SLIDING DOOR CORPORATION

U. S. SLIDING DOOR CORPORATION
404 EAST 108 STREET, NEW YORK 29, N. Y.

MBM-6

Please send me, without obligation or cost, your catalogue and complete information on Slide-Ease doors. I am interested as a

..... Architect ..... Builder ..... Dealer

Name.....

Address.....

City..... Zone..... State.....

Why every builder should use

WRIGHT RUBBER TILE

for bathroom floors

1. **It costs less** than other permanent bathroom floors.
2. **It is warmer** underfoot than other waterproof floors.
3. **It resists scratching** better than other permanent floors.
4. **It resists staining** by acids and medicines better than most other permanent floors.
5. **It helps sell houses!** Women see the many advantages of rubber tile for bathrooms.

Specify WRIGHT RUBBER TILE in the next homes you build!

WRIGHT MANUFACTURING COMPANY
5203 Post Oak Road, Houston 5, Texas

WRIGHT RUBBER TILE

FLOORS OF DISTINCTION

- WRIGHTEX—Soft Rubber Tile
- WRIGHTFLOR—Hard Surface Rubber Tile
- WRIGHT-ON-TOP Compression Cove Base

3455

LETTERS

posal that you publicize a drive for a fund to rebuild Taliesin.

It would seem to me only just that the architects of this country contribute something to our most colorful figure. I suggest that the AIA also make some effort in this direction.

Theodore J. Prichard, *Architect*
Moscow, Idaho

• H&H has endorsed reader Prichard's contribution to FLLW for the reconstruction of Taliesin and will be pleased to forward such additional contributions as may be inspired by his initiative. —ED.

Sirs:

The descriptive advertising in both the FORUM and HOUSE & HOME is not only very educational to the layman but it gives direct information of the newer advances in heating; air condition; design; construction advances, etc.

The various articles are of intense interest relative to the "big" constructive projects being done; the trend in government controls; and information relative to financing of building from the big development down to the home itself.

THE PARIS CLINIC
Paris, Ill.

TWO SIDES

Sirs:

I subscribed to your new magazine because I was anxious to see what it would have to offer a real estate man in a small town. Frankly, I was very much disappointed. H&H seems to me a glorified catalogue, which with a lot of idealistic ideas of high-priced architects, would be ideal for people with incomes of $50,000 a year and over. But for the Mr. Average American with an income of $3,600 to $5,000 a year, I can find nothing in your magazine that would be of any help to any realtor to help Mr. Average American get more for his money.

G. HALLETT NEALE
Elkhart, Ind.

Sirs:

As president of a department store, I am interested in furniture and housing trends. I find your magazine best for this purpose.

ROY H. MYERS, *President*
John G. Myers Co., Inc.
Albany, N. Y.

EDUCATIONAL

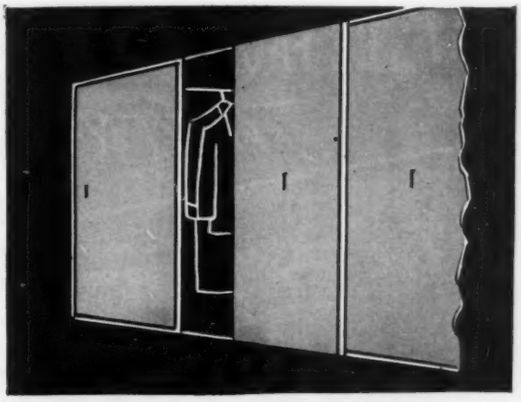
Sirs:

I am a free-lance designer, Ontario College of Art '50, now a student of Canadian Institute of Science & Technology Studentship, a general course in architecture. You seem to be one of the few magazines that has succeeded in tempering the technical with esthetic and vice versa.

DAVID MACKAY A.O.C.A.
Dartmouth, N. S., Canada

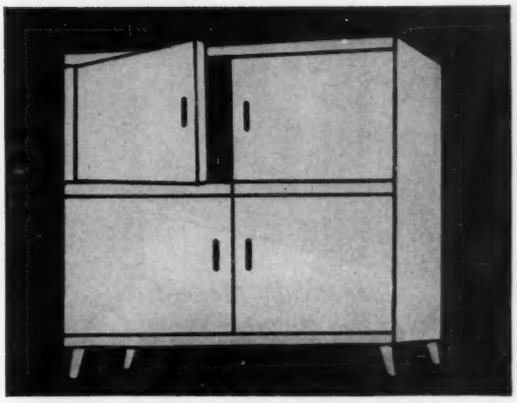
(Continued on page 58)

You've been waiting for novoply*



for Sliding Doors and Partitions...and Cabinet Doors!

Here's why:



NOVOPLY...the completely new and different wood paneling...solves a problem that could never be solved adequately before: *the sliding door and sliding partition problem.*

Novoply solves this problem because:

it is the flattest paneling ever produced ...virtually warp-free!

It is light in weight... spectacularly beautiful.

And perhaps the most amazing thing about Novoply is this: with *all* its advantages, it is surprisingly LOW-PRICED!

You can have Novoply — and *like* it — any way you want it... natural, stained, painted, veneered.

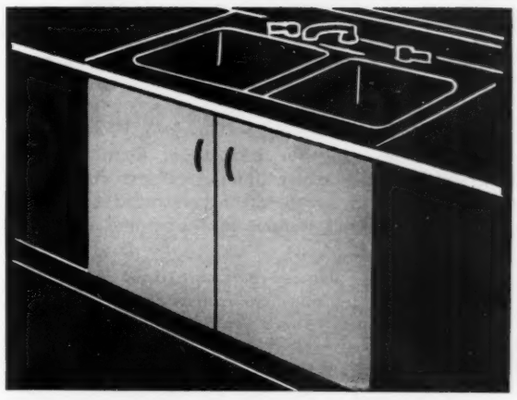
It is easily worked by ordinary woodworking tools. Can be sawed, screwed, planed.

So investigate Novoply... not *only* for sliding doors and partitions... but also for wall paneling, furniture, really distinctive built-ins.

Maybe you can think of *other* ways to take advantage of Novoply, too.

Send the coupon today for a sample and descriptive booklet.

*T. M. Reg. Patented: Other patents pending



Weldwood®

Made by **UNITED STATES PLYWOOD CORPORATION**

Manufacturers and Distributors of
Weldwood® Plywood, Weldwood® Doors and Other Wood Specialties
Largest Plywood Organization in the World

MOB 7-52

UNITED STATES PLYWOOD CORPORATION
55 West 44th Street, New York 36, N. Y.

Please send a sample of NOVOPLY and descriptive booklet.

Name .....

Address .....

City.....Zone.....State.....

GET THE FACTS *on the Amazing* Fleetlite Aluminum WINDOWS

Beautifully Modern
Reduces Building Time
Comes Packaged in Carton

Offers **NEW LIVING COMFORT**
EASY HOUSEKEEPING

● Here's the revolutionary new window you've been hearing so much about . . . the window that builders are applauding . . . the window home owners are specifying —FLEETLITE Aluminum Windows. They come, packaged and ready for installation, these complete year-'round units combine interior and exterior double hung windows in a four-channel extruded aluminum frame. Keep homes warmer in winter and cooler in summer.

When you build—plan for the future, insist on FLEETLITE Windows for the home owners comfort—for the added sales advantage—for protection of resale value. It costs no more to have the best.

FLEETLITE Windows are the most handsome, most practical windows in America. Get the facts for yourself — *today.*

FLEETLITE double hung windows on each side of FLEETLITE matching picture window.

Double windows weather stripped with pile mohair give most complete protection against winter cold, summer heat or dust storms.

Block rain, adjust air flow for inside pleasure by centering the two middle sash.

Sash easily and quickly removed for washing.

WRITE TODAY for complete literature on FLEETLITE Windows

MADE BY . . .

TERRITORIES OPEN FOR FULL TIME FACTORY REPRESENTATIVES

Fleetlite
AMERICA'S *finest* WINDOW

As advertised in House Beautiful, House and Garden, Small Homes Guide, American Builder, Practical Builder and Magazine of Building.

FLEET OF AMERICA, INC., 102 Pearl Street, Buffalo 2, New York

LETTERS

Sirs:

Have you ever considered publishing architectural textbooks? With your writing staff and experience you could certainly make the other texts look silly.

JON WILCOX
Boulder, Colo.

SEWERLESS TOILET

Sirs:

In answer to Mr. Fritz B. Burns' letter (H&H May '52), the closed circuit toilet system (Mar. '52) was developed to conserve water. It is technically impossible to combine kitchen waste, bath and lavatory waste with that of the toilet. A small well or sand leeching trench will take care of the 25 to 40 gals. of kitchen waste water, etc.

Long electric power failure has no effect upon the toilet system. On the basis of all present knowledge a faster method of oxidation than that described is not possible. Heat would not help a bit; it would add greatly to the cost but more particularly it would kill the bacteria that combine oxygen that is dissolved in the water with a carbon of the waste material.

In regard to the letter of Mr. Klug (H&H May '52), a long time ago coventional toilets were tried and found totally impractical for this particular system.

There is no noise . . . . At least half of the manufacturers of garbage disposal units have attempted to combine their equipment with conventional toilets with miserable luck and a fantastic first cost for equipment.

Long ago a Venturi was employed in the research not for the purpose of entraining more air—which is unnecessary—but to make it possible to use the toilet unit in a semi-ventilating capacity.

As to a pump, no commercially available pump can do a better job of grinding the waste material than the MacPherson unit. The use of a diverting valve and appropriate piping would premit intermittent operation of the toilet, if for some practical reason that were desirable. But why should someone be required to operate a device when it is much more simple to have it operating all the time anyhow?

CARL BOESTER
New York, N. Y.

DEMOUNTABLE HOUSE

Sirs:

We recently demonstrated our demountable house (H&H Apr. '52) to the HHFA officials on their visit to California.

The house was telescoped from a 25′ to 8′ width and packaged for highway travel in 3½ hrs. for a total of 42 man-hours. It was expanded and reassembled ready for occupancy in 60 man-hours.

(Continued on page 60)

There's no REAL substitute for CHASE® COPPER WATER TUBE

For hot and cold water lines

Why risk a substitute when you know you just can't beat Chase Copper Water Tube for domestic hot and cold water lines! Chase Copper Water Tube will not clog with rust. For new construction use Chase Type L, hard temper, and Chase solder-joint fittings. Available in 20 foot straight lengths hard or soft temper. Type L, soft temper, also comes in 40 foot, 60 foot and 100 foot coils that can be snaked behind walls and under flooring.

For underground piping

Look at all the advantages in using Chase Type K Copper Water Tube soft temper, for underground piping! It is so ductile it can be bent around rocks and obstructions. Settling won't harm it as it moves with the earth. Chase Copper Water Tube comes in coils in lengths up to 100 feet. This means fewer fitting connections. All Chase Copper Water Tube is readily bent and cut.

Chase® BRASS & COPPER

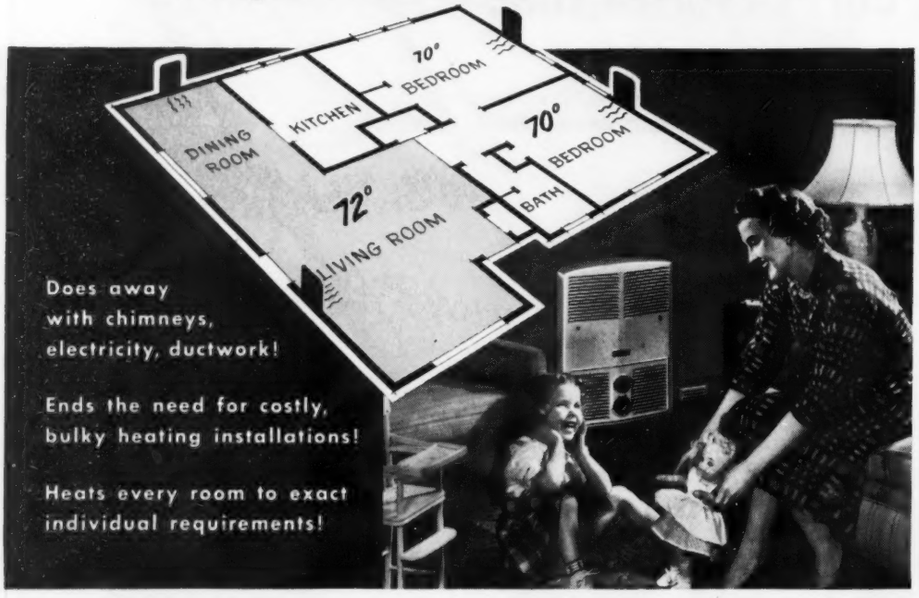
WATERBURY 20, CONNECTICUT • SUBSIDIARY OF KENNECOTT COPPER CORPORATION

• *The Nation's Headquarters for Brass & Copper*

Albany†	Chicago	Denver†	Kansas City, Mo.	Newark	Pittsburgh	San Francisco
Atlanta	Cincinnati	Detroit	Los Angeles	New Orleans	Providence	Seattle
Baltimore	Cleveland	Houston†	Milwaukee	New York	Rochester†	Waterbury
Boston	Dallas	Indianapolis	Minneapolis	Philadelphia	St. Louis	(†sales office only)

NEW! "Safety-Sealed" gas heating...

Simplifies zone control



Now! You can save valuable floor space . . . short-cut major heating costs . . . get individual heating comfort in every room with modern "*Safety-Sealed*" Units. *And* all with a degree of simplicity and ease of installation never possible before in clean, dependable, carefree gas heating!

These revolutionary "*Safety-Sealed*" Units represent an entirely new principle in design. Gas is burned in a *sealed* combustion chamber—then all combustion products are *vented outside* after use. Room air is never used for combustion; remains at constant healthful degree of humidity. They are quickly, easily installed in any exterior wall, with *no chimneys, no ductwork or electricity.*

Uniform Heat Distribution —No Moving Parts

"*Safety-Sealed*" gas heating units give controlled uniform heat to any room. They heat cold walls, stop chilling drafts, and have no moving parts to maintain or replace. "*Safety-Sealed*" Units operate silently, efficiently on either natural, manufactured or LP gas for the life of the home.

Consider these advantages of "*Safety-Sealed*" gas heating units . . . now!

- Real savings against rising building costs.
- A greatly simplified, compact, dependable heating system.
- Solves moisture problems of combustion products in tightly insulated small homes.

STEWART Safety Sealed WARNER
GAS HOME HEATING

STEWART-WARNER CORPORATION • *South Wind Division*
1514 Drover Street, Indianapolis 7, Indiana

Specify... Recommend... Install...

Clip and mail this coupon *today* for the *complete* story of "*Safety-Sealed*" Gas Heating Units—the answer to your design problems in heating modern homes!

Approved by American Gas Association

Stewart-Warner Corporation, South Wind Division
Dept. K-72, 1514 Drover St., Indianapolis 7, Ind.

Please send me specifications and complete details on "Safety-Sealed" Saf-Aire Heating Units.

Name_____

Address_____

City_____ Zone____ State_____

LETTERS

Your story on the Knox Corp. and Gresham Construction Co. featuring the Bergstrom expanding house quoted 355 man-hours as the redeployment time for a second location. I don't know how HHFA got this figure because my estimates were always under 200 man-hours. However, the actual test, which after all is the proof of the pudding, showed a demounting time of 42 man-hours and a reinstallation time of 60 man-hours for a total of 102 redeployment man-hours as against the reported 355 man-hours.

Redeployment cost per sq. ft. proved to be about $.85 per sq. ft. in California and about $1 per ft. where deeper frost line foundation may be required. In this redeployment cost are included removal and re-erection man-hours cost, transportation cost for 100 miles, new foundation and landscaping including utility leads 30 ft. from foundation.

C. V. Bergstrom, *Engineer*
Santa Clara, Calif.

BETTER DESIGN NEEDED IN OHIO

Sirs:

I think someone should put on a national campaign against these "checkerboard" houses. Why is it that people think a low-cost house necessarily must be bad design? And why, oh why! is everyone nuts about picture windows? And have you ever observed some of the "pictures" they get? Wow!

Dorothy M. Thompson
Lebanon, Ohio

Sirs:

Here in Cleveland we have seen the spectacle of literally thousands of boxlike, unimaginative dwellings erected by numerous builders on 40-foot lots originally laid out according to the standards of 1920.

Very few have realized or cared about the great need for intelligently planned developments of moderately priced houses designed for modern living and priced for families in the $5,000 to $7,000-a-year bracket.

Your magazine can be a powerful influence toward the improvement of standards.

R. B. Meil
Cleveland, Ohio

OPERATION GARAGE

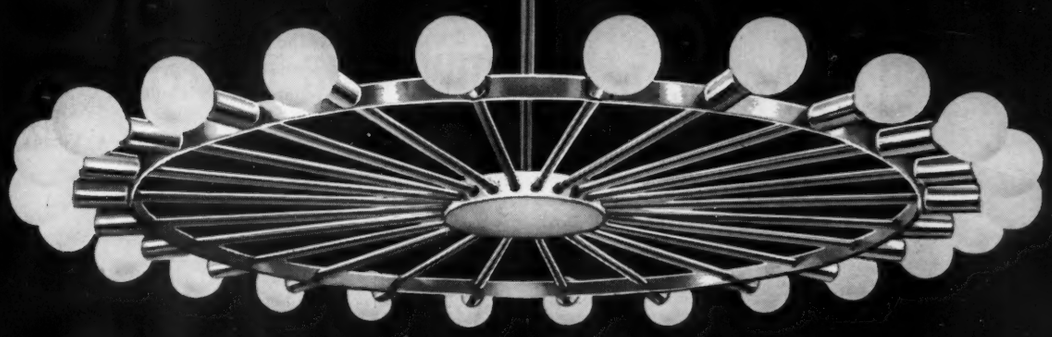
Sirs:

Fortunately for me I have been reading your magazine for a good many years.

So when I needed a garage . . . I went to a first-class contractor—a big company but not too big mentally to talk about what the building was to be used for. So I took out the old drafting tools and laid out *what I wanted to do with the building*, and what I could expect from the land area whose location was an important factor. Then I listed the things I wanted—steel roof, flat to save cubic area that

(Continued on page 62)

THE AMERICANA



Another distinguished LITECRAFT fixture, beautifully and functionally designed for today's modern and provincial decor.

Cat. No. 265: 24 lights with hoop
Diameter: 36 inches with lamps
Cat. No. 266: 24 lights without hoop
Diameter: 36 inches with lamps
Cat. No. 267: 16 lights with hoop
Diameter: 26 inches with lamps
Cat. No. 268: 16 lights without hoop
Diameter: 26 inches with lamps

Lamps: 10-15 Watt Candelabra Base Lamps. Length: 24 inches. Finishes: Satin Brass, Velvet Black and Italia White. Other finishes to order.

LITECRAFT MANUFACTURING CORPORATION
Foot of 53rd St., Brooklyn 32, N. Y.

See the complete Litecraft Line at our new Los Angeles Showroom

LITECRAFT

the quality line of superior design

8336 West 3rd St., Los Angeles 48, Cal.

Brooklyn 32 • Newark 3 • Los Angeles 48

Please send me, without obligation or cost, your illustrated catalogue showing the complete line of LITECRAFT LIGHTING fixtures. I am interested as a

Architect ☐ Builder-Contractor ☐ Decorator ☐
Management Exec. ☐ Homeowner ☐

Name.....

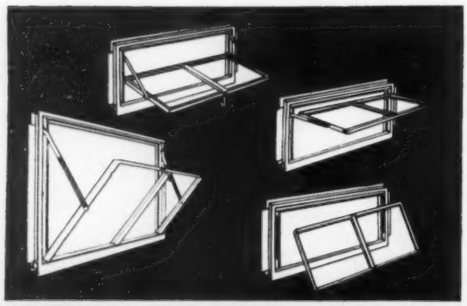
Address.....

City.....**Zone**....**State**.....

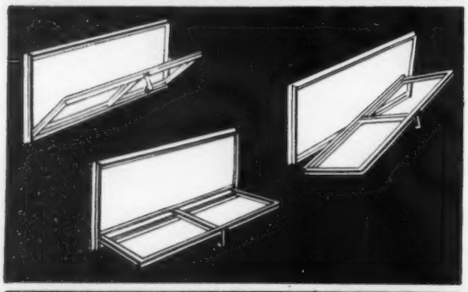
MB-4

FOR
EXTRA VALUE
IN
STEEL WINDOWS
Specify
VENTO

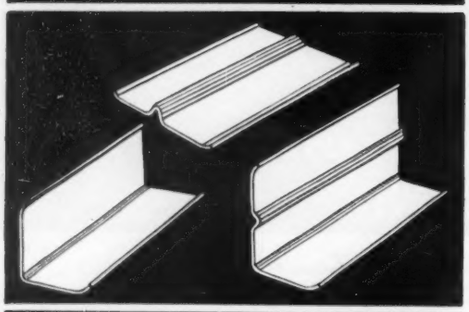
VENTO RESIDENCE CASEMENT WINDOWS
give extra value through their greater rigidity, easier operation and double contact weather-tight seal. Extension type hinges, gracefully designed Roto or Lever type handles allow ventilator adjustment without screen removal. Available in all standard types and sizes.



VENTO "CHAMPION" BASEMENT WINDOWS
give extra value because of their 14-gauge electrically welded frame, fins welded to jamb for quick installation and double contact with leak-proof watershed sill. Three standard sizes, putty or puttyless glazing.



VENTO "THRIFTY" BASEMENT WINDOWS
give extra value because they are a real economy window especially designed for lower cost housing. Two position ventilation and easy sash removal. Fin flanges at jambs for quick installation. Three sizes, putty type only.



VENTO FORMED STEEL LINTELS
give extra value because they permit the use of standard 8" blocks over door and window openings. Of 10-gauge steel, with stiffening crimp in center, in lengths from 2½ ft. to 5 ft. Formed lintels for brick construction 2½ ft. to 5 ft. long of 11-gauge steel; 5½ ft. to 7 ft. of 10-gauge steel.

Also Vento "Champion" Barred Basement Windows; Vento "Champion" Utility and Barn Windows; Vento "Thrifty" Utility and Special Type Windows. See our catalog in Sweet's 1951 Architectural 27b/Ve or Sweet's 1952 Light Construction File 4c/Ve. Write us for full information and name of nearest distributor.

MEMBER METAL WINDOW INSTITUTE

VENTO STEEL PRODUCTS CO., INC.
256 Colorado Ave., Buffalo 15, N.Y.

LETTERS

would have to be heated—double-purpose heating and a lot of things.

Then I went to the insurance company and said what is wrong with these ideas that will stop me getting the very lowest insurance rates? They took pot shots at it certainly for my benefit.

Then we had the thing engineered, the doors and windows put at the right places and then I let the contract on a cost plus basis. The result, a few things that now I might do differently and they do not count. So your magazine has been worth a lot to me.

JAY PUTNEY
Oshkosh, Wis.

CREDIT FOR THE CONTRACTORS

Sirs:

Naturally I am quite pleased at having the Kahului project published by a magazine like yours (H&H May '52).

There was possibly an error in the article, i.e.:

The General Contractor of the houses was the firm Misawa and Shirai.

The roads, sewer and water mains were installed by Territorial Contractors. The article lists the Kahului Development Co. as the general contractor; however perhaps it is correct to regard the Development Co. as the general contractor.

THEODORE A. VIERRA, *Architect*
Honolulu 13, T. H.

FEWER ISSUES

Sirs:

A suggestion: continue to issue two magazines but bimonthly, that is, each every two months, a grand total of 12 annually. I wonder if you won't one day come to this.

JOSEPH JUDGE
New York, N. Y.

P.S. Naturally, I'd like to see you publish this letter chiefly to see if anyone else feels the same way.

OUT OF AFRICA

Sirs:

We take this opportunity of complimenting you on the very fine presentation of both HOUSE & HOME and ARCHITECTURAL FORUM. HOUSE & HOME is a particularly good publication, which we think will be found very useful to our type of business.

HERBERT EVANS & CO. LTD.
Johannesburg
South Africa

Sirs:

I have been a subscriber to your magazine since April 1949. I have been, because I enjoy Your magazine so much. It is as far as I know one of the—if not the—best magazines on architecture & building. I have ever read.

P. R. CHARBONNIER
Minzenberg, Capetown
South Africa

NOW...

NEW DISTINCTION FOR ANY STYLE OF HOME WITH

decorator doors

of Ponderosa Pine

Now you can make interior color schemes *complete*—with these distinctive Ponderosa Pine Decorator Doors. With their delicate shadow-lines and beautifully proportioned panels, they offer you and the home owner almost unlimited decorative possibilities. What's more, you have a wide variety of Ponderosa Pine paneled doors to choose from, styles that fit every type home, contemporary or traditional.

Ponderosa Pine Decorator Doors are precision-made—clean and sharp in their detailing—with a satin-smooth finish that takes practically any kind of decoration. They are available preservative water-repellent treated for high resistance to dimensional changes.

Our new consumer booklet, "Latest Color Style News," contains a wealth of information on Ponderosa Pine Decorator Doors, information which you, too, will want for your file. Mail the coupon now for your free copy.

The Rancho, 3-equal Panel Decorator Door

(Catalog No. ND-103)

●

YOUR COPY... FREE!

Ponderosa Pine Woodwork
Dept. VHH-7
38 South Dearborn Street
Chicago 3, Illinois

Gentlemen:

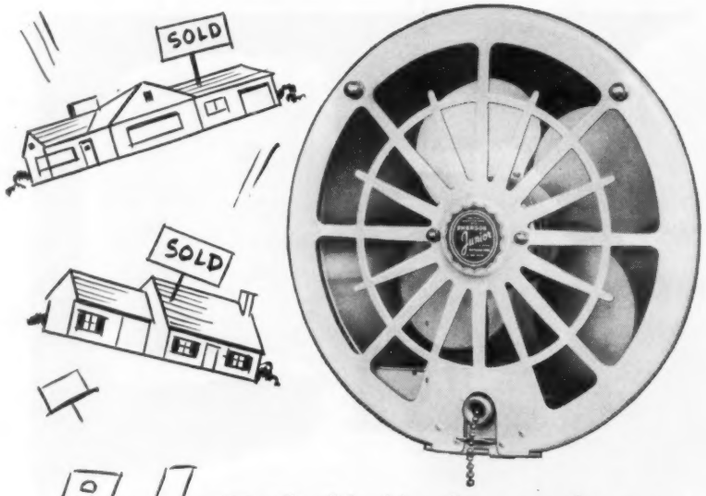
Please reserve a copy of your new book, "Latest Color Style News," for me—and send it to me without cost or obligation.

Name.....

Address.....

City.....*Zone*.....*State*.....

Ponderosa Pine
WOODWORK



SOLD

To Sell Modern Living at its best...

SPECIFY

EMERSON-ELECTRIC KITCHEN VENTILATORS

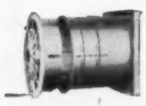
Clean, cool, odor-free air in the kitchen is no longer considered a luxury. Home buyers everywhere—*demand* comfortable, healthful, modern living.

That's why truly modern kitchens boast ventilators. And when you install Emerson-Electric Kitchen Ventilators in your homes, you add a low-cost but effective salesmaker to your staff. Emerson-Electric has been favorably known for the manufacture of dependable, efficient fans for over half a century. Yet, Emerson-Electric Kitchen Ventilators cost no more than ordinary fans—and are economically installed!

For full information, write *today* for Bulletin No. T94

THE EMERSON ELECTRIC MFG. CO., St. Louis 21, Mo.

WALL MODEL... Telescoping adjustable sleeve fits walls 5¼" to 13". Square outside frame, easy to brick or frame around. Special outer door seal gives weather protection. Induction motor, 10" blades move 470 c.f.m.



CEILING MODEL... Adjustable sleeve joint fits standard 3¼" x 10" duct. Outside grille has angle baffles for weather protection. Automatic shutter closes duct when fan is not operating. Dependable Emerson-Electric motor equipped with special thrust bearing.

SPECIFY EMERSON-ELECTRIC ATTIC FANS

Build cool, summer comfort right into your homes by installing Emerson-Electric Attic Fans! Here is another sales-clincher . . . available in four sizes from 24" to 48". Note: you'll save *half* on installation by installing during original construction.

EMERSON ELECTRIC

FANS • MOTORS APPLIANCES

BEHIND THE BLUEPRINTS

A genuine product of the twin cities, Minneapolis architect **GERHART W. BRANDHORST** was born in St. Paul (1915) and educated in Minneapolis, at the University of Minnesota. He quit school in 1937 to design houses for various clients and in the 15 intervening years has never found time to go back for the last three months' study required for his architectural degree. During the war years, Brandhorst worked for private architect-engineers designing naval facilities up and down the eastern seaboard. He remained in New York for a year after the war, working on "traditional but huge country houses." Returning to Minneapolis in 1946, he received his registration, went into general practice, amassed a varied portfolio of houses, schools, creameries, banks, stores and restaurants. The contemporary brick-and-redwood garden apartments called Valley Village in suburban Minneapolis are Brandhorst designs (p. 98).

PETER POWERS HALE, 36, is a Harvard-trained architect practicing in the rival (Yale) stronghold of New Haven, Conn. Hale's professional background is diversified, includes a year each of heavy building experience with Stone & Webster and the Turner Construction Co., plus a three-year directorship of the New Haven City Plan Department (1944-'47). Hale opened his own architectural office in 1948, from which he designs houses, stores and small factories. Featured this month is a merchant builder development conceived by Hale to prove that contemporary design need not be watered down to sell houses (p. 116).

RICHARD G. HUGHES of Pampa, Tex., an insurance salesman turned builder, who parlayed a $3,000 parcel of land into a sprawling organization of typically Texan proportions: over 22 corporations, gross assets exceeding $5 million. Hughes, 47, builds in five different west Texas towns in and around the Panhandle (p. 82), commutes between building sites in his own plane. He also owns: a group of apartment houses, a lumber yard, a wholesale hardware store, a retail building supply outlet, a mortgage firm, an insurance business, a shopping center, his own six-story office building, and a local radio station. Hughes is the National treasurer, NAHB.

VINCENT G. KLING, 36, won his architectural degrees with top honors at Columbia University and MIT ('37), has been collecting national awards ever since. Kling's Philadelphia practice currently consists of $22 million worth of construction on the drawing boards or under way. Largest of these projects: New Jersey's Hunterdon Medical Center and its East Orange Hospital; Philadelphia's Jefferson and Lankenau Hospitals. Kling copes equally well with houses, one of his earliest having been the widely published beach house selected by the Museum of Modern Art for its "Built in USA—1932-1944" exhibition. The Scull House featured this month shows what Kling did with the tree-lined site and usable materials of an old carriage house (p. 88).

HUGO NEUHAUS, JR., practices architecture in Houston, Tex., where he was born, earned his degrees in the East at Yale and Harvard (B. Arch, '41). An air force veteran, Neuhaus worked for Houston architect Kenneth Franzheim before opening his present office in 1948 with C. Herbert Cowell. Their work includes "an assortment of houses, offices and shops" plus a string of pumping stations for Shell Oil and stores for Sears, Roebuck. Neuhaus' own prize-winning house is published this month (p. 68).

Architect **OSCAR STONOROV** was born in Germany in 1915, studied in Italy, Switzerland (with architect Karl Moser) and France (with sculptor Aristide Maillol). In the late Twenties he worked for famed tapestry muralist André Lurçat in Paris and for Le Corbusier, publishing a book on the latter's work in 1929. Since 1932, Stonorov has practiced architecture in the US, with George Howe and Louis I. Kahn in Philadelphia in the early Forties, and now alone. An early public houser, Stonorov was PWA consultant in 1933, won an award with Kahn for Carver Court, public war housing project in Philadelphia. He has also delved into city planning (Dec. issue, '47) and prefab housing (Oct. issue, '51), and through it all, has turned out a steady stream of adroitly planned, custom-built modern houses (p. 92).

ARKANSAS SOFT PINE

Center and End-Matched Sheathing

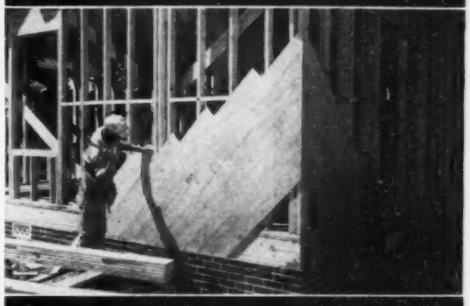
GIVES YOU THESE BONUS VALUES . . .

1. Tensile strength for rigid framework.
2. Goes on ⅓ faster than plain end.
3. Insulation at no extra cost.

Look for the trade-mark at your lumber dealer's.

ARKANSAS SOFT PINE TRADE MARK REGISTERED

Goes on fast. End joints eliminate trimming at stud centers.



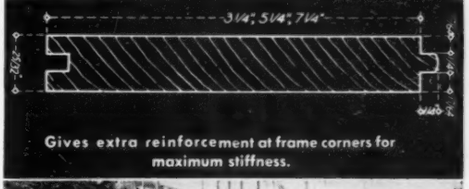
1. Wood sheathing matched at side and ends forms an integrated, continuous "skin" covering the studding. Applied diagonally, held firmly in place by the nail-holding power and tensile strength of wood, this sheathing gives stiffness and rigidity to framework, not even approached by synthetic pressed composition sheathing.

2. Saves ⅓ actual time in application, because end-matching disregards stud centers; eliminates end-trimming except at corners and openings; joins up fast.

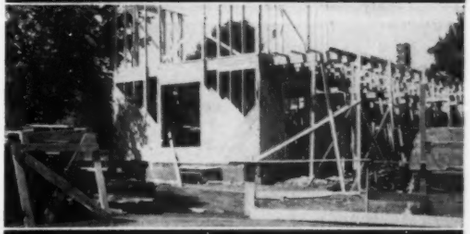
3. Arkansas Soft Pine sheathing is kiln-dried to correct moisture content. Such thorough seasoning converts it, into a non-conductor of heat and cold. On an outside wall, material of 25/32" standard thickness keeps out as much heat as 5" of common brick, 9" of face brick, 12" of stone or 13½" of concrete.

Arkansas Soft Pine center and end-matched sheathing is delivered in 4' to 8' bundles. Center-matched stock, plain end, is available in standard long lengths.

Sold by retail lumber dealers and planing mills east of the Rockies. For data, illustrated grades and how to specify, send for this complete Handbook for Builders.



Gives extra reinforcement at frame corners for maximum stiffness.



Facilitates use of short lengths in narrow spaces.

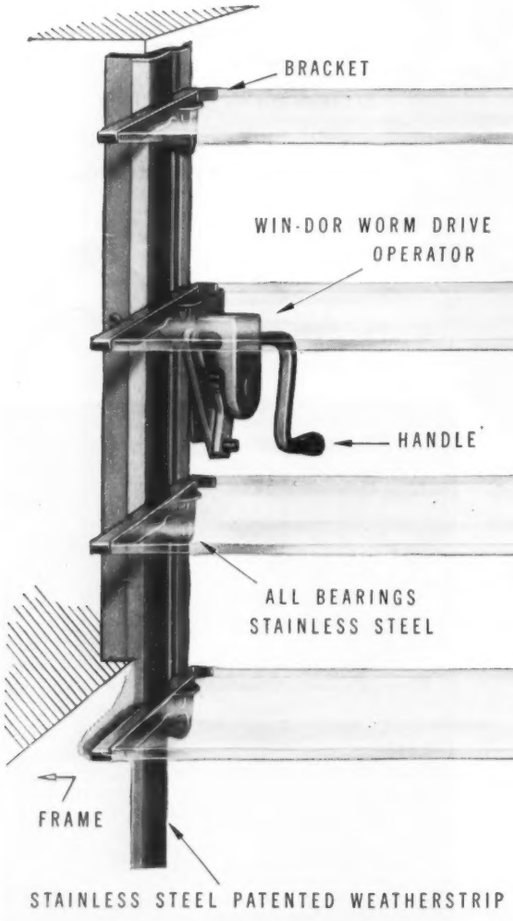
ARKANSAS *Soft Pine* BUREAU

752 Boyle Building

LITTLE ROCK, ARKANSAS

Win-Dor APPROVED

jalousie windows and doors are made with *the finest operating hardware you can buy!*



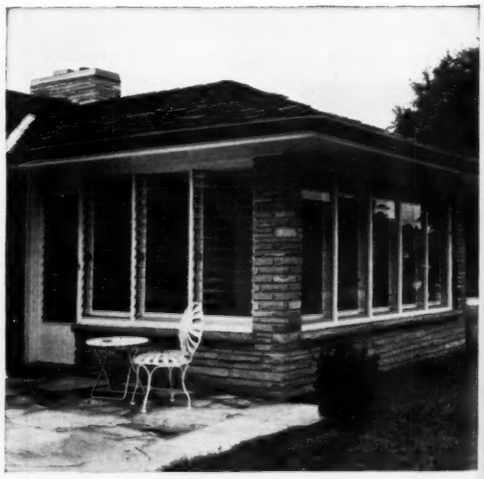
For many years Win-Dor hardware has set a specification standard for quality, and patented Win-Dor integral Jalousie hardware is an outstanding example of the precise engineering, excellent workmanship and high grade materials which have made the Win-Dor name famous.

The Jalousie operating equipment illustrated on the left is a rugged, smooth working, weather-tight assembly. It features the sturdy Win-Dor worm and gear type operator, providing automatic locking in any position, stainless steel pivot bearings, corrosion-resistant metal brackets designed to eliminate all vibration and stainless steel weatherstripping. Recognized laboratory tests indicate low air infiltration of 45 cubic feet per hour per perimeter foot. (Detailed report on request.)

The amazing popularity of Jalousies invites careful selection of hardware and installation details by architects and builders. Specifying Win-Dor hardware for these modern and convenient window and door openings is your assurance of client satisfaction. See Sweets' section $\frac{17a}{CA}$ for complete information.

Full wall installations with Jalousies from floor to ceiling are dramatic and provide a definite sales appeal for new homes. They also offer unlimited possibilities in modernization and remodelling.

As windows, Jalousies are unequaled for convenient ventilation, especially so where openings are required in places where difficult opening and closing is encountered with typical fenestration.



Jalousies are ideal for porch enclosures. They give weather protection even when open and are quickly adjusted for complete enclosing. Screen and storm sash are inside—thus providing extra year 'round living space.

Win-Dor Approved Jalousie windows are a product of The Casement Hardware Co., manufacturers of the Win-Dor Casement Window hardware famous for quality since 1906.

THE CASEMENT HARDWARE CO., DEPT. H-7, 406 N. WOOD ST., CHICAGO 22, ILL.

Cheaper houses or better values?

The automotive industry stopped making a cheap car 25 years ago— stopped so long ago that very few even remember a 1925 Ford cost only $260. (Today's is $1,562.) Yet far more low-income families have cars today than ever before*, and apparently low-income people are happier riding around in a $2,000 car bought second or third hand for $500 than in the kind of car Detroit could turn out for $500 new.

How different this is from the folkways of homeowning! And the interesting point is this: the public seems perfectly satisfied with the automotive industry's roundabout way of providing low-priced cars. No politician seems even to have noticed that cheap cars are no longer made; none has suggested any such nonsense as a billion-dollar-a-year federal fund to give a new Buick to anyone who cannot afford a new Chevrolet (a rough approximation of public housing's program for making the taxpayers put up an average of $10,675 plus a unit to house anyone who cannot afford a $7,000 home on his own).

Perhaps homebuilders can profit by this example: Alan Brockbank and Fritz Burns are 100% right, we believe, when they say the one best way to provide better housing for the poor is to take the profit out of slum ownership and force the owners of substandard housing to fix them up at their own expense. That is the basis on which Charlotte, N. C. has almost wiped out all its slums. It is the basis of the famed Baltimore plan, which is proving profitable for tenants and owners alike. It is the basis for the new private-enterprise slum rehabilitation programs in Pasadena, Cleveland, Paterson, Corpus Christi, and many other cities.

In new communities where old housing is scarce the only answer may be the development of some sort of minimum house to meet the immediate need *(see p. 82)*.

But there comes a point where a builder has to start taking value out of his house faster than he can take dollars out of his price. Even in Phoenix, most competitive of homebuilding markets and one of the few places where you can buy a good three-bedroom house for $7,000, a better value could be offered for a few hundred dollars more. As long as so many wastes** are forced upon homebuilding there are many cities where the kind of house homebuilders can provide for under $6,000 may not always be worth building. Too often the builder of a really low cost house gets no better thanks than to be told he is erecting "the slum of tomorrow."

Like the auto makers, homebuilders might often be wiser to leave the minimum price market to the reconditioned old house and concentrate on the job they can do best — giving better value in the $10,000-$13,000 bracket. This means getting good architects to streamline their designs and improve their site plans, making their rooms a little larger and their plans more livable, sparing some shade trees and giving a little bigger lot, making housework easier by filling the kitchen with labor-saving machinery under the package mortgage, even adding air conditioning.

Whenever a better house is built and sold as many as 13 families on down the economic scale play musical chairs and move to a little nicer home. Every new house built and sold, regardless of price, helps ease the housing market, makes old houses just that much easier and cheaper to buy.

And so in most communities every good new $12,000 house means a low income family can move to a better home too.

** In fact, a free garage for every tenant's private auto is required even for many public housing projects.*

*** As long as foolish and divergent codes block the economics of standardization—as long as feather-bedding runs up the bill for labor—as long as closing costs can be racketed above $500.*

Glass doors lead from entrance court into foyer

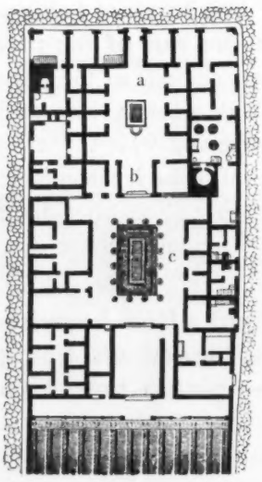
Roman house

Its patios, pool and succession of formal spaces make this a modern variation on an ancient prototype

This costly house has very little to suggest about economy—for strict economy was never an object; very little about climate control—for a three-zone cooling system gives the house its own climate without benefit of sun shades or any other compromises with pure design; and very little even about structure and its expression—except, perhaps, that walls are only walls, important only to create spaces, to close or open vistas.

But this house does have something worth saying about how to create privacy even on a corner lot, create it so subtly that few would notice that practically no windows face the street and that the house is thus a polite wall which welcomes guests but bars Peeping Toms. It has a good deal to say about the interplay of closed and open spaces, brick walls and glass screens, cool colors and warm sunlight, formal structure and informal planting. In brief, it has much to say about architecture as an art—things that should delight designers and builders even of houses far too small to utilize directly the ideas developed here.

Location: Houston, Tex.
Cowell & Neuhaus: architects
C. C. Fleming: landscape architect
Kaser-Oakes Const. Co.: general contractor



Plan of typical Roman House
a atrium
b tablinum
c peristyle

Above all, this is a large and luxurious house; but unlike many large and luxurious houses in oil-rich Houston, this one has a measure of simplicity, orderliness and serenity that would set it apart anywhere.

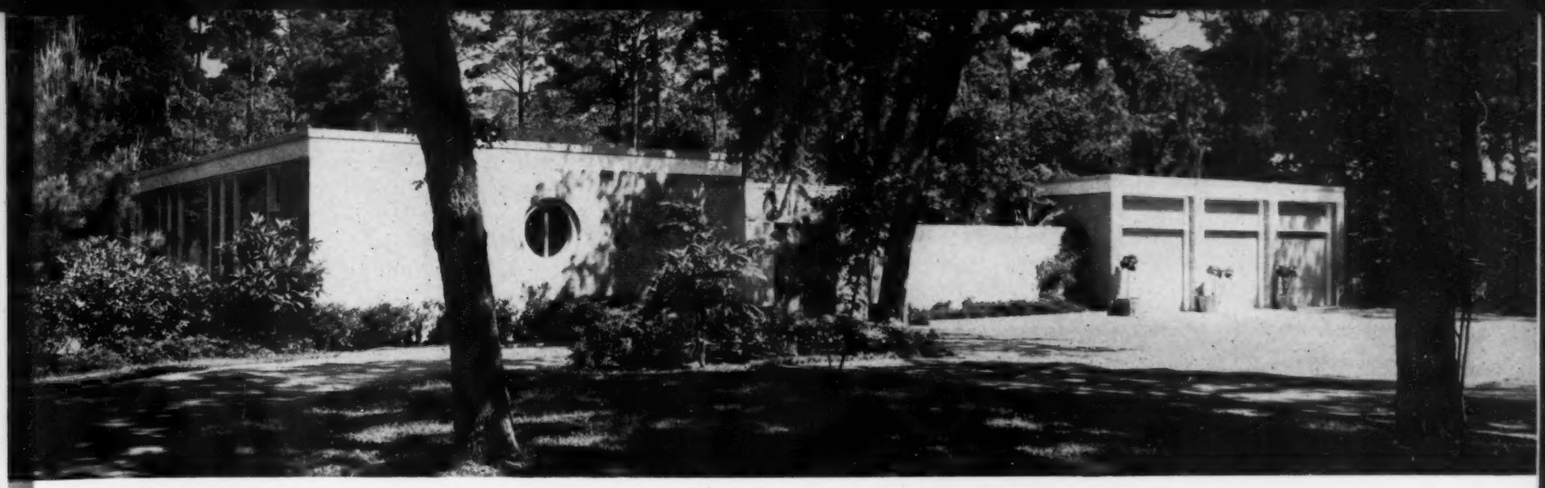
One reason architect Hugo Neuhaus was able to produce such clarity and simplicity within a highly complex set of requirements is, of course, that he invested his own house with a great deal of simple, good taste—a quality as hard to explain as it is easy to recognize. A second reason—and one that *can* be explored in some detail—is that he followed the principles of architectural organization first laid down by the Greeks and Romans more than 2,000 years ago: Like the early prototypes of those periods, his house is really a small town—a series of walled-in subhouses (each with a different function) grouped around a number of patios (or living areas that are open to the sky).

The Greeks and Romans used this system of grouping in order to produce a succession of exciting spatial experiences as you walked through narrow gates into a wide patio—and then through another narrow passage into another, even wider patio. Each patio had its own special character: The first, the *atrium*, might be a semipublic court which you entered from the wide-open street; the next, the *peristyle*, with a pool in the center, might be a more private, outdoor living room; and, finally, after passing through yet another narrow space, there might be a calm, walled-in garden, separated entirely from the outside world.

Architect Neuhaus has followed this system in principle; but because his materials are entirely modern (and permit him to open up walls and spaces to an extent unknown to Romans), he was able to dramatize the movement of flowing space even more strikingly than most Roman architects could do it with the materials *they* had.

Thus he connected his walled-in subhouses with wide and glassy volumes and through them the flow of space has become more effortless, smoother and more exciting. There are exciting changes of light, of atmosphere and of vista as you progress through the house. Every sudden view across the pool, across a patio and toward a plain brick wall is carefully studied; every relationship of formal building to informal planting is designed as meticulously as a Japanese flower arrangement. This house does not ramble, for Neuhaus felt that *large*, rambling plans could easily dissipate themselves in formless confusion. His house is a succession of space-experiences that build up, in an orderly way, to the climax of the central patio.

There is another aspect that makes this house seem as classical in spirit as it is modern in structure and equipment: this is the massive weightiness of its brick



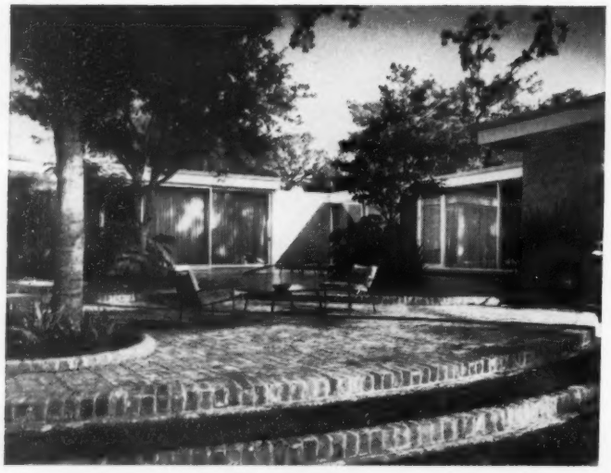
View from the street approach shows house removed from its corner property lines. Zoning restrictions dictated the location

Photos: Ulric Meisel—Dallas

View of foyer looking out to entrance court. Brick is textured, salmon pink

subhouses. It is as hard to imagine this house with deep roof overhangs (in place of its tight band of fascia) as it would be to imagine some Roman basilica topped off with low-slung, overlapping roof planes. The reason is, of course, that an almost monumental formality seems to call for a vertical geometry, and that buildings around patios that are open to the sky should *appear* to be reaching for the sky—and not for a distant prairie horizon. In Neuhaus' esthetic there is an intimate relationship between the concept of the patio house open to the sky and walled in on three sides, and the concept of a facade that carries the eye upward toward the sky also. It goes without saying that these concepts are as romantic as any envolved by the close-to-the-soil school of thought.

In only one respect has Neuhaus modified this severe formality: he felt that there was a need for a definite break between the angular geometry of his interiors and the planting and terrace patterns in his central patio. The patio is very large—at least 60′ in any direction—and it required an informal subdivision into sunbathing, dancing, outdoor dining and lounging areas so as not to dwarf small gatherings (actually, it can take 75 guests without the slightest trouble). So the planting and paving areas are free-shaped and the vegetation is tropically lush and even wild. Only in the 15′ x 45′ pool (whose inside surfaces are painted a cool blue) is there some reflection of the rectangular geometry of the architecture.



Central patio. Curved steps lead down to lawn and wooded ravine

Swimming pool is central feature of patio. Banana trees, paper plants and loquats produce a tropical setting

To simplify his complex program, architect Neuhaus decided to zone his plan and group rooms with related functions together. These groups of rooms are treated almost like brick-walled houses that are then linked by glass-enclosed living spaces. There are three distinct groups of rooms: the service group (with servants' quarters, pantry, kitchen, garage); the bedroom group (for the child, nurse and guests); and the master bedroom suite to the west.

The glass-enclosed areas between these walled-in units form a continuous, flowing space, contain the dining room, entrance foyer and living room.

The plan also includes three major outdoor areas: a service court to the north, a formal entrance court to the west, and the central patio with its pool and bathhouse.

Dining room opens upon central patio also. Ramp for food cart slopes down to outdoor dining area

Cool house in a hot climate

For Houston's hot and humid climate, Neuhaus devised a year-round air-conditioning system decentralized to correspond to the major areas of his house. Parts of this system can be cut off without affecting the rest, and relatively short duct-runs from the system's three units reduce furring under the 10′ ceilings to a minimum. Strict economy here—as elsewhere in the house—was no object.

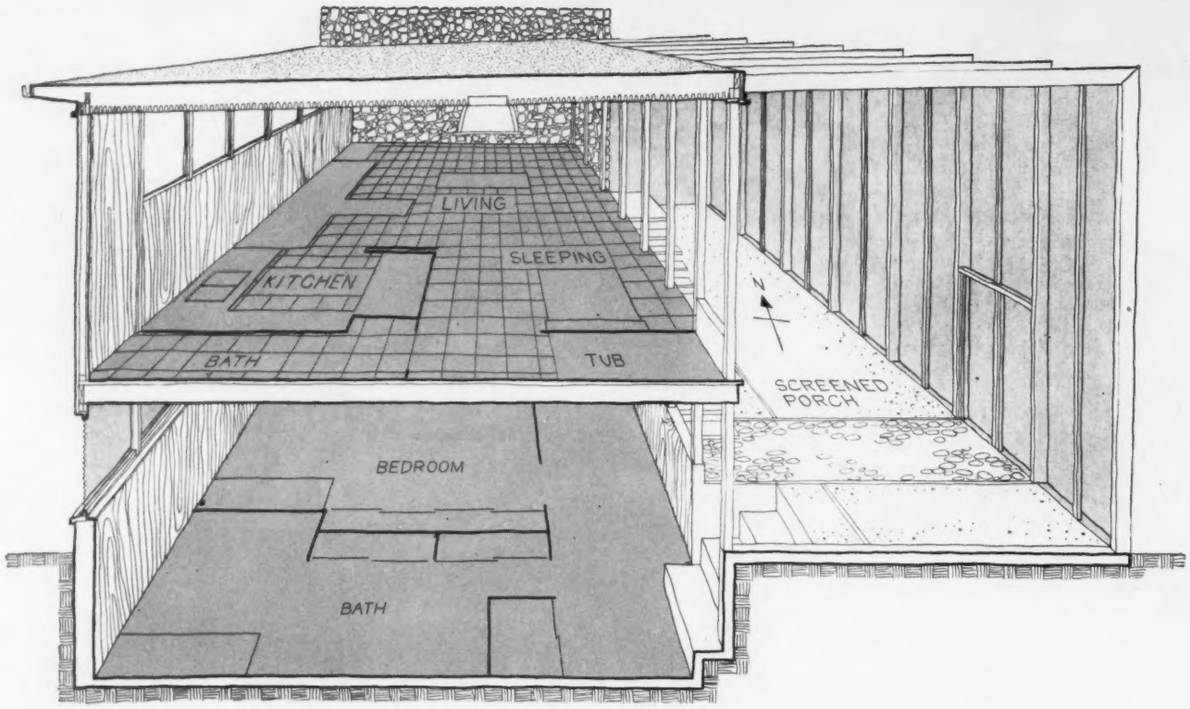
Neuhaus also cooled his house by using cool and restful colors. The dominant background color is a light, bluish gray, where there are plaster surfaces, and a dusty, salmon pink where he has exposed his brick. Against this background are played shades of blue in upholstery fabrics, together with darker shades of gray here and there.

At night, the house is dramatically lighted to stress the elegant transparency of its structure: recessed ceiling fixtures throw an even wash of light over entire wall surfaces and give a pleasant reflected light to the rooms. They also permit the paintings to be moved around at will. In the patio, the banana trees, paper plants, loquats and elephant's ears are brilliantly lit from mercury vapor floodlights sunk in copper cylinders into the ground.

While the special needs and problems of this plan called for a very special solution, architect Neuhaus has demonstrated one way of merging the entirely modern esthetic developed by men like Mies van der Rohe, with the classical formality that gave the Roman house its characteristic elegance. This successful blend of modernity with tradition gives his house a sense of style that has been sadly lacking in much modern work in the past.

Living room colors are cool grays and blues. Large glass walls along two sides of room make it sunny and bright.

View of pool and living room beyond *(opposite)*. Broad roof fascias help give coherence to a complex building.



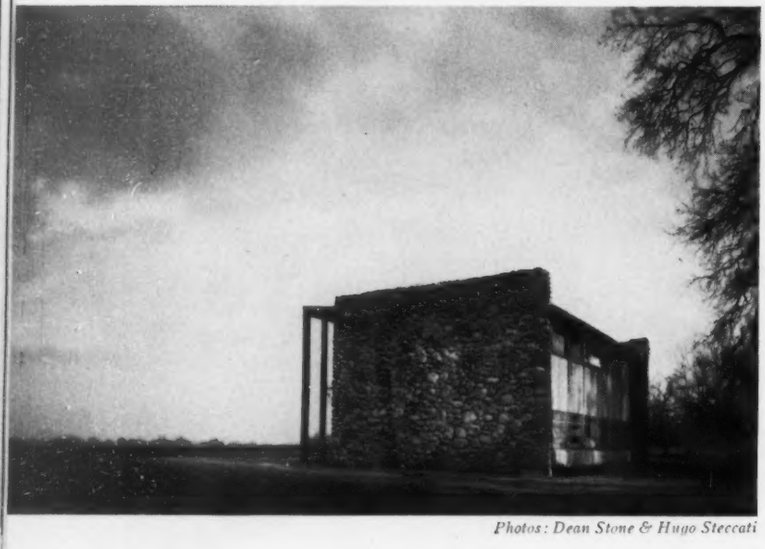
3 levels and a view

An object lesson in how space flows, how views change and how 12,000 cu. ft. can be made to look like a great deal of house

LOCATION: Cowpie Ranch, Vina, Calif.

MARIO CORBETT, architect

Site is flat, 300-acre tract at edge of Sierras



Photos: Dean Stone & Hugo Steccati

Two factors make this small house a very unusual piece of residential architecture. They are:

1—a split-level plan that has a good deal to say about the flow of space, about privacy as well as openness, and about the imaginative use of limited cubage;

2—an arrangement of "viewing platforms" from which one and the same flat field is made to appear excitingly different as your eye level changes, and which endows the surrounding site with a curious life of its own.

In addition, architect Mario Corbett's small house in Vina, Calif., to which the national AIA gave a certificate of merit, is one of the handsomest structures built on the West Coast in some time. Its framing discipline, its colorful use of natural stone, mosaics, indoor planting and paving make this an impressive contribution to the modern movement.

Space flows up and down. For years architects have been intrigued by the concept of split-level spaces. There are numerous reasons for this—

First, it is exciting to pass through rooms of different ceiling heights, and to go up or down a few steps from one room to the next;

Second, it is exciting to stand a half-level above a tall room and look across it at a distant view;

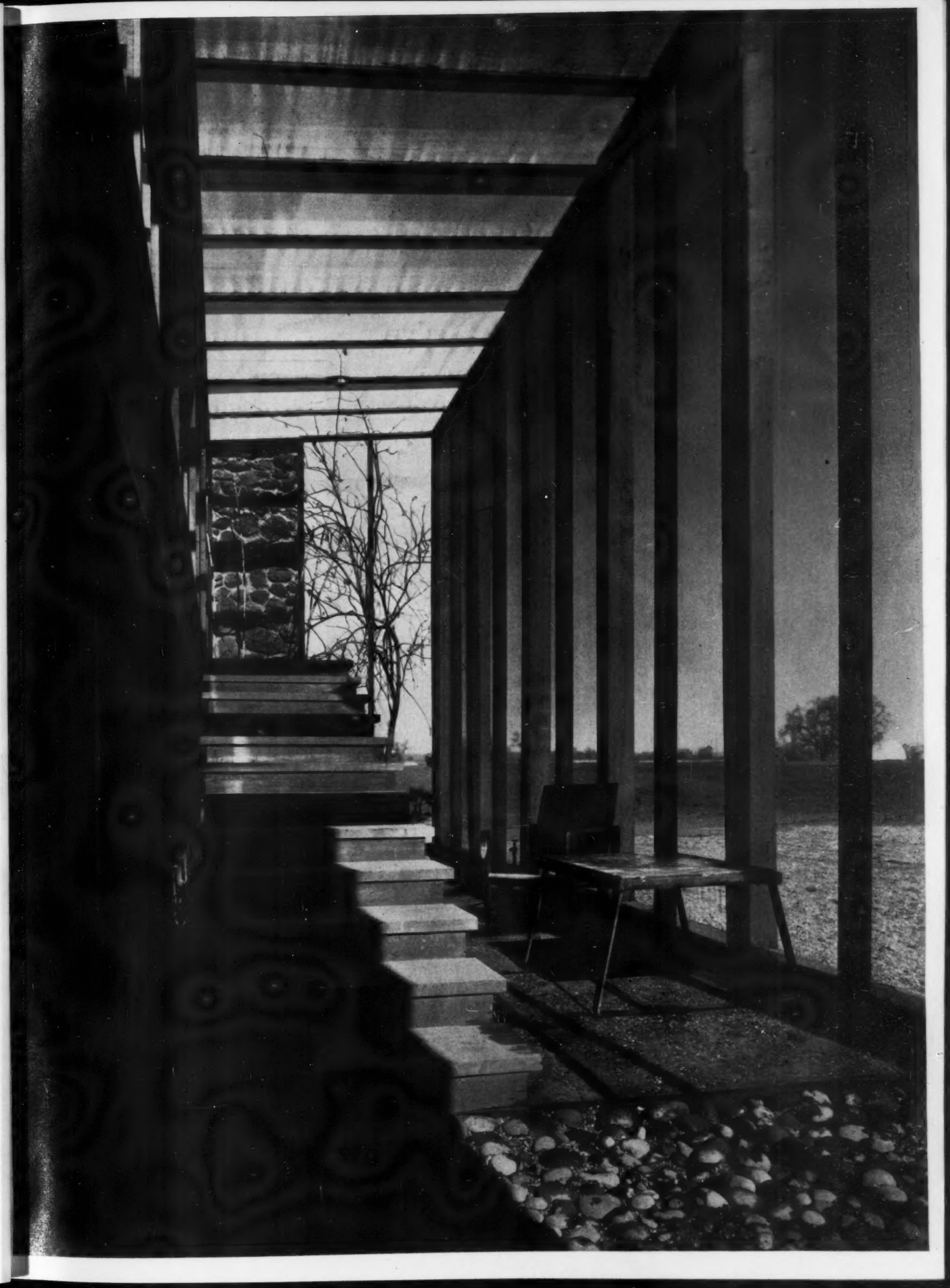
Third, it is exciting to create a sensation of *visual* privacy by placing different-use areas on different levels, without separating them by ordinary partitions;

Fourth, it then becomes very exciting also to enjoy a view of *all* of the interior space *all* of the time, from any part of the house—without being seen yourself;

And, *finally,* it is exciting to experience all these sensations and then to realize that they all add up to something every good architect strives to achieve: a three-dimensional flow of space that operates not only horizontally, from room to room, but up and down and across as well.

→

Screened porch is 1½ stories high, links two levels of house



View of screened porch showing mosaic tub by George Harris at far end of upper shelf

Sliding shoji screens sleeping area on upper shelf

Porch-house seen from the east

Kitchen is connected to lower level by dumb-waiter

Upper level is wide open, overlooks porch at right

Shelves and a screened porch. This house has three-dimensional space. Basically, it consists of two, rectangular shelves, one above the other, each 42′ long and 16′ wide, each about 9′ high. They are held between massive stone walls that run along their short edges. The top shelf is held about 5′ above grade; the lower shelf has been sunk about 4′ into the ground.

Along one long side of this set of shelves, architect Corbett built on grade a 15′ tall, 10′ wide screened porch with a plastic screened roof similar to Polevitzky's famous bird-cage house (May issue '50), to which it bears a rough-hewn resemblance. Seen from the front it is almost all screen. Behind the screen is a combination entrance porch, indoor garden and indoor-outdoor living space for the entire house. From it you step down a short flight to the lower shelf (which is planned to contain guest and children's bedrooms, dressing room and bath), or up a somewhat longer flight to the upper shelf (which holds the kitchen, bath, utility, sleeping, eating and living areas).

Both shelves are virtually open to the screened porch—sliding glass panels are the only division, and these can be opened to the cool breezes for most of the year, so that the tall, 1½-story porch then becomes the principal living area of the house. Since the windows on the west side can also be opened up all the way, the house can be turned into a breezeway during the hot summer months.

The actual enclosed cubage is less than 12,000 cu. ft.; but the 6,000 cu. ft. of the screened porch can be thrown in with this volume to give an illusion of much greater spaciousness. Thus anyone resting in the upper-shelf bedroom has an uninterrupted view of 30′ of house in most directions; another, sitting in the screened porch, finds himself in a 15′ high space with indoor views that might extend for as much as 40′; yet neither person need be aware of the other's presence, for their different eye levels provide privacy for each.

Both, moreover, will be aware of the curious excitement that comes from a three-dimensional space flow. In architect Hugo Neuhaus' esthetic *(p. 68)* the flow of space is channeled between two fixed horizontal planes—a uniform floor plane and a uniform roof plane —and modulated by free-standing brick walls. Mario Corbett's space has no such directional quality; it is allowed to move around with as little impediment as possible, within the limitations of the over-all volume of the structure.

While this is a decided asset in a small house—for most people make a small house appear even smaller by chopping it up into tiny cubicles—Corbett's concept has certain limitations. Since he enters through the 1½-story porch, the whole concept of the house is apparent to the visitor the moment he comes in the front door, although some of the nuances of the space arrangement will not become clear until he has stepped up (or down) to one of the two shelves.

Some split-level designers have tried to overcome this absence of surprise in one-room houses by entering by way of one of the lower shelves, then creating a succession of "growing-space" sensations as you proceed from a low-ceiling into a high-ceiling area. The special problems of this site, however, made such a solution difficult.

3 LEVELS AND A VIEW

View from living area across screened porch

A site comes to life. This site is very flat and extends for a long distance without relief. Far beyond the edge of the 300-acre tract there are the Sierras. At normal eye-level, this is a view that holds little sustained excitement.

Corbett realized, however, that it might be possible to make this view come alive if it were to be seen at constantly changing eye levels —much as even a dull landscape comes alive to the pilot as his plane rises slowly into the sky. By going up a mere 5′, Corbett found that the furrows of the plowed soil and the patterns of planted crops suddenly took on the kind of foreground interest that was needed to set off the distant views. Moreover, these patterns created a depth of perspective to the whole view that increased its drama considerably.

For this reason Corbett started by raising his principal living-shelf off the ground. Sinking a second shelf into the ground beneath seemed natural since *(a)* it would create a cool retreat in the hot season, and *(b)* it would utilize necessary foundation walls—obviously a less costly procedure than putting both shelves above ground. The screened porch became the natural, intermediate level between the two shelves. A dumb-waiter from the upstairs kitchen serves the lower shelf, reduces stair traffic to a minimum.

While Corbett thus got the most out of a dull site and a difficult view, he felt that additional indoor views would help further to divert the eye. Some of these views have been discussed on p. 77. Others include areas of small-scale interest handled with unusual sensitivity and art. For example, the stonework inside this house has some of the quality found in Japan. It ranges all the way from the crude, rounded stone (from a dry river bed nearby) used in the walls, through the heavy cobblestones used in one part of the screened porch, down to the fine scale of the gravel used elsewhere. Another example of sensitive and colorful detail is the mosaic tub designed by George Harris and placed, as an integral work of art, at one end of the upper shelf. Here, as in other recent attempts to joint modern architecture with the other arts, a "fine" artist has made an entirely functional, as well as beautiful contribution.

Structurally, this house is simple enough: 4″ x 6″ redwood posts, 5′-4½″ on centers, line the structure in its long direction, support 2″ x 12″ roof joists and 2″ x 10″ floor joists. The posts are exposed on the exterior. Between them are 12″ wide, resawn redwood boards used as vertical siding. Ceilings are finished with similar boards, with alternate boards dipped in creosote or lime, to produce an alternating dark and light finish. What partitions the house has are finished in plywood, and floors are covered with cork tile.

House seen from the west shows two levels, main stair

Living area on upper shelf is open to screened porch →

This is the first installment of a regular new feature in HOUSE & HOME — *a monthly report on important developments in the modernization of mortgage credit, with particular emphasis on the expanding potential of the package mortgage, the open-end mortgage, and the expandable mortgage. Until now architects, builders, realtors, lenders, and building supply dealers have had no place to turn for up-to-date information on better ways to finance the modernization of old homes or the more complete equipment of better new homes. From now on they will find that information reported regularly in a special department in the front of* HOUSE & HOME. *Next month's story will tell of an important new development in the expandable mortgage.*

Crack in high cost of title insurance points to fuller use of the open-end mortgage

Would you—or would one of your clients or customers—like to borrow some money *on your present mortgage* to pay for air conditioning or a new garage, or a new bedroom, or a window wall, or a labor-saving kitchen—for major repairs or a face-lifting modernization?

Almost any savings and loan association will be glad to accommodate you, and so would many savings banks, and so would many of the big insurance companies in the mortgage field, notably the Prudential Insurance Co., Mutual Benefit of N. J., and the National Life of Vermont. Up to the original value of your mortgage—and sometimes even higher—they would just add to your unpaid balance the cash you need for improvements. Then you would pay it off through accelerated monthly payments—or perhaps your mortgagee would extend the term and let you keep up your present payments for a few more years. This is known as the "open-end" or "additional advance" mortgage procedure. It was first sponsored by this magazine to make it a lot cheaper and a lot easier for homeowners to borrow money to improve their property. (The best alternative is a Title I loan at 9.6% with only three years to pay.)

Simple, isn't it?

Well, not quite so simple, and not quite so easy—*until now.*

The hitch has been that lenders cannot let you have the added money unless it will have the same first mortgage status as the original loan. They need to satisfy their lawyers and bank examiners that you have not put any subsequent lien on your property that might come between their first mortgage and the loan for your modernization or repairs.

In other words, they need title insurance, and until now the cost of title search and title insurance has often been prohibitive.

In northern New Jersey, for example, title insurance for a $1,000 advance might cost as much as $110—or about three years' interest. And even at this price it might involve long delays while the title was being searched all over again.

Now all that top-heavy cost and all this delay is unnecessary. For New York's City Title Insurance Co., pioneer in many other moves to cut the cost of title

guarantees, announces through HOUSE & HOME that for only $5 per $1,000 (minimum fee $10) it will insure the title on any additional advance within the original total of any first mortgage in any state.

The procedure City Title will follow is simple enough to be spectacular: without waiting for a title search, it will simply accept the homeowner's affidavit that no liens have been placed on his property since the original mortgage. Lending institutions already doing business with City Title can get automatic insurance coverage simply by sending to City Title: (1) a notification of the amount of the advance made, and (2) the affidavit, which City Title will prepare, signed by the owner. Other lenders can get the same added insurance at the same low rates but they may have to wait a few days to get their policies. For old and new customers alike, this procedure will eliminate the delay usually involved in searching title.

City Title plans a few other innovations—for instance, it will present to the lender simply the policy of title insurance instead of the long (8 or 9 page) certificate usually furnished, thereby cutting down on time and cost. But primarily its novelty is a business assumption that the man who owns his own home is a sound risk and that his word is good. Says City Title Insurance Co. President Saul Fromkes: "We have faith in the honesty and integrity of the small homeowner, and we are willing to take a simple business risk." Some time after the insurance has been granted, the company will spot check the titles for complete protection, but it expects to find few cases of false affidavits.

City Title (whose Board Chairman is Senator Irving Ives (R, N. Y.) has been something of a pioneer in title searching and insurance. When big-builder Bill Levitt began erecting his mammoth development out of Long Island's potato farms after the war, the company struck what was then a unique bargain with him: instead of trying to get thousands of fat fees for searching the title on each of Levitt's 60′ x 120′ lots, it made *one* search—on the original land Levitt bought—and then insured the titles of all the lots carved out of it. This reduced the title fees on Levitt's houses from $64 to $15, which Levitt absorbs in his selling price.

City Title expects other title insurers eventually to follow its lead in granting inexpensive title insurance for open-end advances based on the homeowner's affidavit. Says Fromkes: "They usually do follow us, but it takes three or four years." Meanwhile, his company is casting about for other new procedures it can impose on what Fromkes calls the "antiquated title insurance industry." Its next program will be title insurance for new mortgages for owners who have already paid off their original mortgage. These titles it will insure for $10 a $1,000 (minimum fee, $20), on the same basis that it will insure mortgaged titles: the homeowner's word that his property is free of debt.

What this means to the building industry

City Title's action is an important step forward in the campaign to modernize mortgage credit, and make first mortgages the basic instrument of low-interest consumer credit.

Why should families who can offer the basic security of a substantial equity in their own homes have to borrow on the same high-interest, short-term basis as families who can offer lenders no such security?

What is the open-end mortgage? and what are its advantages?

The advantage of this new type of credit for homeowners shows up most prominently in a review of the disadvantages of the short-term loans which are the borrower's only alternatives: (1) overextension of short-term credit has sunk many a small homeowner into foreclosure, and (2) fear of precisely that kind of sinking has kept many more prudent potential buyers from purchasing the new kitchen, the carpeting, or the repairs they want and need. But—and here lies the challenge that produced the open-end mortgage—the fear of heavy debt and foreclosure has also deterred many who could safely handle a loan on an open-end basis. A low-income homeowner, for instance, might wisely decide that his budget could not stand the $63.80 monthly payments required for a $2,000 FHA Title I loan for a new heating plant; but he might very well see his way clear to pay back the loan at $21.22 a month, as he could if his mortgage had at least ten years left to run and were "opened up" to provide for the additional cash.

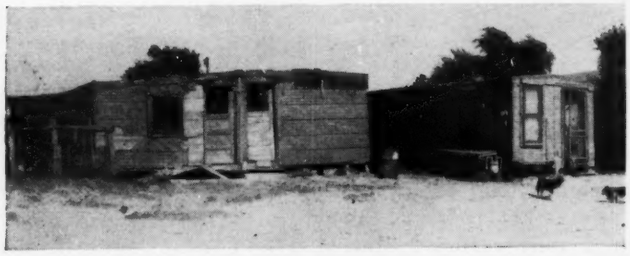
The open-end mortgage permits the owner to buy *better* equipment than he could under high-cost, short-term financing arrangements. Short-term credit prompts many a customer to choose an inferior product even though he knows he will pay more for it later in higher maintenance.

What kind of market would the open-end mortgage open up?

Some economists, noting the $3 billion that now goes annually into home modernization and repair, believe that full use of open-end mortgage credit could double that figure, for the 9 million US families who own mortgaged homes have equities in those homes totaling $48.6 billion.

If this great credit tool exists, why isn't it being used? It is being used!

Last year, about $400 million was loaned in additional advances under open-end mortgage agreements. But the open-end mortgage still is not used as widely as it could be. This is partly because too few homeowners know about it—and too few architects, builders, lenders, and dealers tell them about it. But partly also it is because the high cost of title searching in major metropolitan areas has made the use of the open-end mortgage impracticable. This is the obstacle City Title's lead promises to eliminate.



A builder's one-man slum clearance project

Dick Hughes has transformed a squalid shantytown into a decent, self-respecting community

Slum clearance is almost like the weather: everyone talks about it, no one does much about it.

But here is a merchant builder who has put across a unique slum-clearance project so successfully that it may encourage other builders to follow his example. Without a penny of government help and in the face of many difficulties, NAHB Treasurer R. G. (Dick) Hughes has wiped out a shameful shantytown and rehoused nearly 2,000 families.

Hughes makes his headquarters in Pampa, Texas, where the population of 30,000 is too small to support a large building operation. In looking around for other places to build he became convinced that if ever a small town needed new houses it was Borger, 28 miles away in the heart of an oil field and carbon-black manufacturing area.

During the war hundreds of defense workers' families had surged into the tiny village. At least 3,000 families built shacks as a desperate substitute for houses they couldn't find. The people of Borger never use the term "multipurpose room"—but everyone in shacktown had one. It was living room, dining room, kitchen and often a bedroom. There were no bathrooms, no running water, no sewers. Toilets were in even smaller shacks in the back yard.

Many families were earning sufficient money to buy a small house, but there were no houses to buy. Nor could they buy land on which to build. The land was owned by ranchers who wanted to keep the oil rights. Even if owners had been willing to sell small lots here and there, neither FHA nor mortgage bankers would look twice at this harum-scarum "no man's land."

To make things more difficult for a prospective builder, the land was crisscrossed with oil pipe lines and gutted with ravines. The village government was bankrupt. But Hughes could see this was where people had to live. Their jobs and friends were here. *The photographs above show typical shacks.*

In setting out to transform this bleak, miserable shantytown into a community of new houses, Dick Hughes could never be accused of doing things the easy way. He finally persuaded ranch owners to sell by showing them they could retain drilling rights through a series of small parks. He then got FHA to go along, which was the first time it had ever approved such property. Getting mortgage commitments was the toughest job of all. He had to go to 57 banks and insurance companies before Arthur Blumeyer of the Bank of St. Louis agreed to buy the mortgages.

Hughes paid nothing for the shacks (in contrast with one Texas slum-clearance project where similar shacks cost up to $7,000 in addition to land costs), but he had to persuade families to move. He got 1,200 families to vacate by offering to truck their shanties to lots with sewer and water he owned nearby which he

Shacks at top of page were replaced by houses like these at Borger, Texas as Hughes transformed 700 acres of "no man's land" into respectable residential neighborhoods. House above cost $3,950. Brick house at right sold for $10,500. Those at far right sold for $6,000-$7,500.

sold for $350. He trucked over 300 shacks to other property. Other shacks were abandoned, although some people are still living in shanties today on land Hughes has not yet developed. Of the 2,000 families now living in Hughes' houses, probably 65% once lived in shanties on the same property.

Houses that replaced the shacks sold for as little as $3,950 and as much as $10,500. For his 700 acres Hughes paid from $600 to $1,800 an acre. He paid $50,000 for moving pipe lines and also moved mountains of earth. Those costs, plus his utilities, brought the actual cost of lots to an average of $1,250.

In Borger, as in the four other towns in which he builds, Hughes tries to offer house buyers a variety of models and a range of prices. He will build a total of 1,000 houses this year: 300 in Borger, 350 in Wichita Falls, 250 in Pampa, 50 in Panhandle and his son Lynn, age 20, is building 50 in White Deer.

Of these, 600 will be defense houses selling at $6,750 to $8,450 or renting for $49 to $77 per month. "You can't solve the housing problem in a town by building only one house," Hughes says. His Title I at $5,500 *(see next page for photos)* is his least expensive house. His highest priced model is a 3-bedroom, $13,000 fully air-conditioned house described here last month.

Since 1940 Hughes has built thousands of houses, put up the air-conditioned Hughes building in Pampa, won high NAHB honors and fought successfully for improved building regulations. He is proudest, however, of his slum clearance in Borger.

Hughes' 10-point system

1. *Build primarily for the low-income family. There are more of them and they need housing more urgently than middle- and upper-class families.*

2. *Offer a wide variety of designs at prices from $5,500 to $13,000.*

3. *Maintain high production by building in five or six towns where housing is needed. Cut travel time for key personnel by owning an airplane.*

4. *Do all your own work; use no subcontractors.*

5. *Pay a liberal bonus to mechanics and foremen for meeting production schedules.*

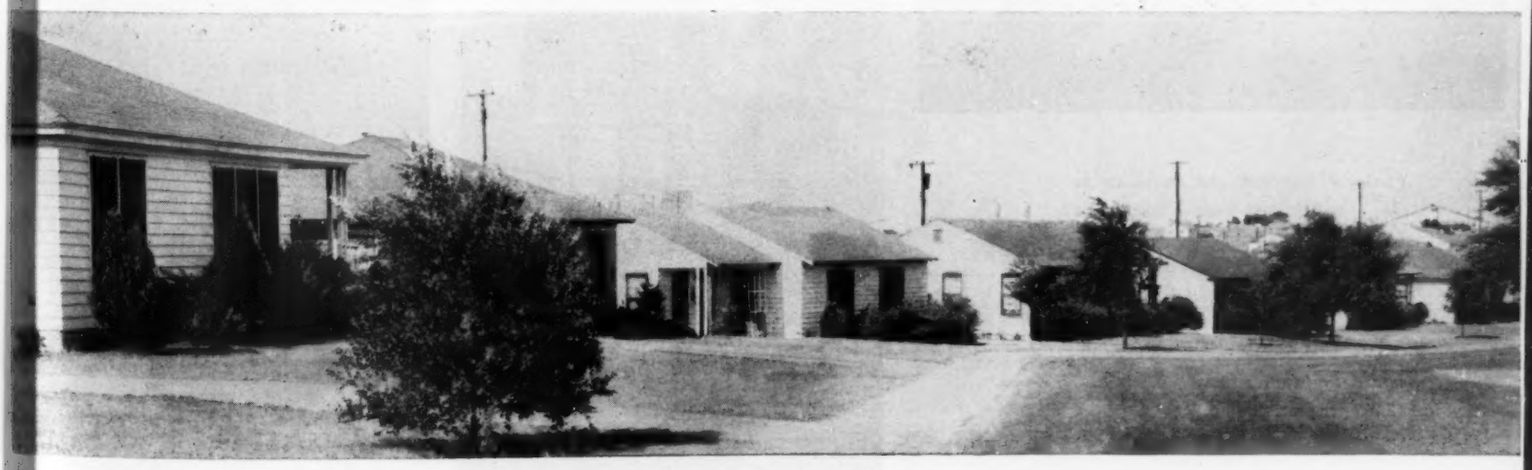
6. *Keep an accounting system that will tell you the cost of each type of work on each project.*

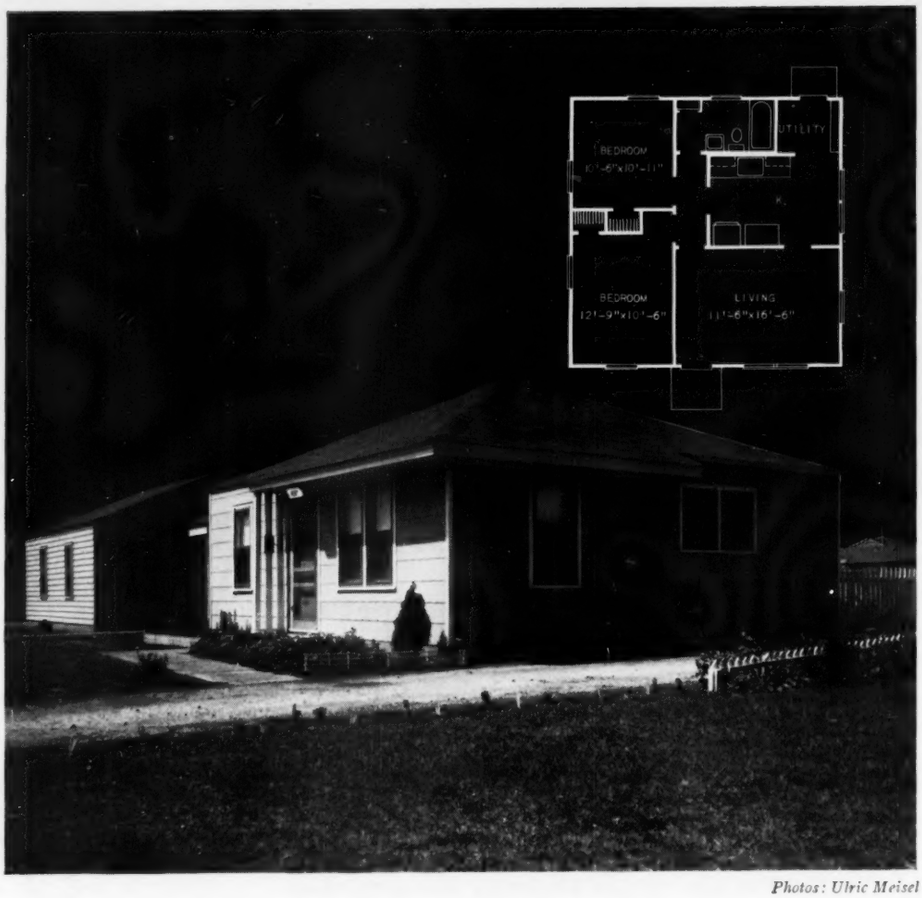
7. *If production warrants it, own your own lumber yard, building supply business, title, insurance firm and other subsidiaries.*

8. *Never overbuild enough to let a local market get soft. Keep just behind the demand.*

9. *When you move into a new community, buy an interest in a local radio station house for advertising and public relations purposes.*

10. *Surround yourself with the best staff you can hire.*

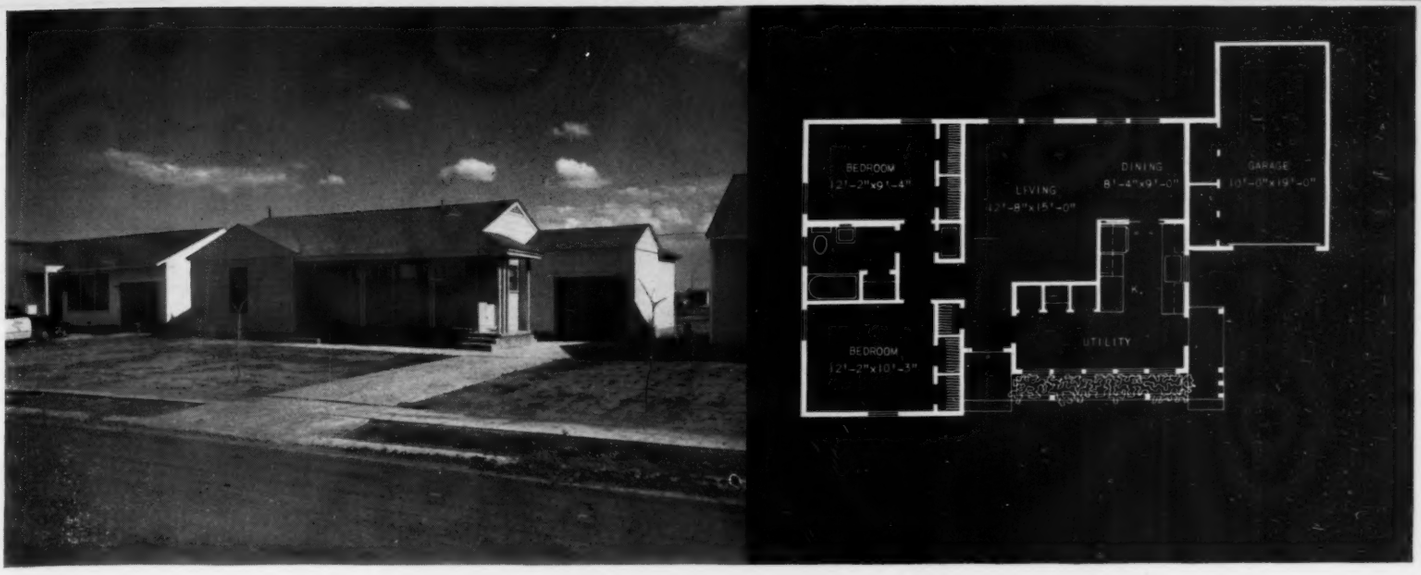




Photos: Ulric Meisel

Two of Hughes' Title I houses in Wichita Falls selling for $5,500. With 702 sq. ft., this house costs less than $8 per sq. ft. including a 50' x 125' lot. It is on a reinforced slab. Vent pipes are asbestos cement, interiors are spray painted. Costs of numerous items are given on following pages in discussion of Hughes' cost system. Total man-hours for this house are only 624. Hughes reports he has never built a house which is so popular with his mechanics. "Our men like to build these," said general superintendent Ned Brooks. "When you get that kind of enthusiasm you can really turn 'em out." These houses can be rented for $49.50 without heaters or $52 with wall furnaces. Buyers have been paying $750 down and $34 a month, which many families agree is a much better bargain than renting.

Views of bathroom and one bedroom show how Hughes' Title I houses are finished. All interiors are painted or papered. Kitchen and bath have asphalt tile. Linen closet and other closets do not have doors but buyers can add them if they wish. These houses can be afforded by families earning as little as $2,200 per year.

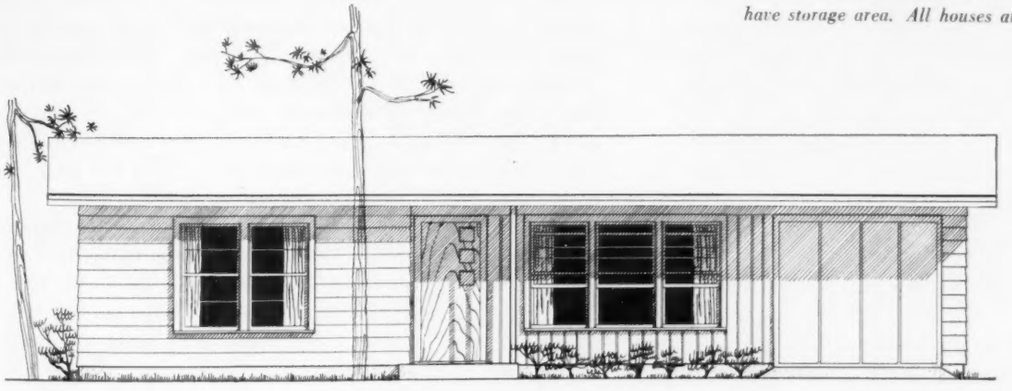


On these two pages are several of Hughes' best sellers. Opposite is the 702 sq. ft. house he offers for $5,500 under FHA Title I. It gives a good idea of just what a big builder can do for that price, and what he has to eliminate. On 40% with wood siding, he eliminates sheathing. He reduced number of electric outlets, amount of storage space; he cut out closet doors, omitted insulation, provided no heating. He piped gas to each room so buyers could install heaters. He provided no garage or carport, but ran two paved strips to rear of house for parking. There is a domestic sidewalk. Streets have gutters, curbs, are paved. In contrast with some other Title I houses in the same area, Hughes gives 75 sq. ft. more, uses heavier ceiling joists, builds a stronger house as the competition has asbestos shingles and 1" x 4" strips nailed 10" on centers for sheathing. At that, Hughes is from $150 to $200 cheaper.

The three Title II houses above were designed by architect B. R. Cantrell and are an attempt by Hughes to lead his buyers to better design. Floor plan is more open, kitchen is in front, living room at rear and windows represent a forward step. Hughes finds he has to introduce new ideas in a few houses one year, and then push them the following year.

Drawing below shows a facade of one of his defense houses which sell at $6,750 to $8,450 or rent for $49 to $77 per month. Largest houses have three bedrooms and a garage. They have a better floor plan, better fenestration than older houses.

Three houses built by Hughes under Title II, which sell at from $9,400 to $9,750. They have from 910 to 955 sq. ft. Some have rear living rooms with window walls. All have wall heaters with ducts carrying heat to all rooms. Lots are 60' x 125' or larger. Carports or garages have storage area. All houses are expandable.



This drawing shows elevation of one of 650 defense houses Hughes is building this year in Borger, Pampa, Wichita Falls and White Deer.

Dick Hughes, speaking at the first "Operation Trade Secrets" meeting last fall, has obviously been exercising his west Texas sense of humor. Man convulsed is Al LaPierre.

A. Y. Owen

LABOR COSTS JOB #21
WEEK ENDING: 8-25-5

	PER OF JOB
Form Setting	6.11
Concrete Placement	2.56
Framing, Shtg. & Deck	2.32
Services	2.08
Cornice	4.49
Roofing	2.72
Siding	4.81
Plumbing	7.37
Header	.96
[redacted]	3.53
[redacted]	1
Yard	4.49
Unloading	3.21
Office & Supervisio	100.
Total Units	

Dick Hughes' "how goes it?" cost system

Flight engineers on the big, trans-Atlantic airplanes keep a graphic chart they call the "How Goes It?" curve. At any minute the captain can tell precisely how the flight is going.

Dick Hughes has an accounting system that does the same thing for him. Because he builds in five or six towns (and especially because he is absent from his business a great deal on NAHB business) he might get into trouble five or six times faster than a builder with one project. But wherever he is, he gets an airmail report on each project each week. A few key figures tell him the status of 23 items for each project.

"A one-man business has some disadvantages," Hughes says. "When the key man falls, the whole organization falls unless the cost system is right. We now have an accounting system which is really sensitive. It lets me sleep at night. I know where I am even if the figures show that things are bad.

"We have cut our costs several hundred dollars per house since we put in our system. It has done a great deal towards making all our people more efficient."

How the system is used

The form illustrated above itemizes the labor costs on 100 houses that sold for $5,500 in Wichita Falls last summer. It is one of the two standard forms Hughes uses. The other deals with materials costs. This form lists 23 items down the left side, plus totals, with 17 columns for each item. Three columns are filled out in advance and remain unchanged: col. 1 is the budgeted per cent of total labor cost for each item; col. 9 is the estimated dollar cost of each item per house; and col. 13 is the estimated number of hours required per house for each item. These are the standards against which the work of each crew is measured each week. All other figures change weekly.

Each Friday Hughes and all his supervisory force get reports for the preceding week. Hughes immediately looks at the total of col. 6 and compares it with col. 9 to see how his costs are running. On the week illustrated, labor cost per house was $1,080 which was $32 less than the estimated $1,112. By glancing up these two columns he could see which items were costing more for labor than had been anticipated. He could see, for example, that while cornice labor should have cost $49 per house, it cost $66 last week, although the average to date with $47. Roofing crews were slower than anticipated, costing $41 last week, and an average of $45, instead of the estimated $31.

Facts like these are immediately apparent to job superintendents and to foremen, who have a meeting each Friday night or Saturday afternoon. They are interested in the figures because their bonus depends on meeting estimates. Each mechanic and each foreman gets a bonus if he meets his particular estimate. They get a second bonus if the total cost per house

PERCENTAGES			COMPLETED		UNIT COSTS				UNIT MAN HOURS				TOTALS			
OF JOB	THIS WEEK	TO DATE	THIS WEEK	TO DATE	THIS WEEK	PREV. TO DATE		ESTI-MATE	THIS WEEK	PRE.	TO DATE	EST	THIS WEEK HRS	THIS WEEK AMOUNT	PREVIOUS	TO DATE
6.41		6.02		94		75	75	64		45	45	40			7045.	7045.
2.56		2.21		86½		22	22	28		12	12	16			1909.	1909.
12.82	.64	12.34	5	96¼	144	151	151	145	80	83	83	80	402	720.	13779.	14500.
2.08	.27	.69	12 3/4	33	19	17	18	20	12	11	11	13	153	243.	339.	583.
4.49	.22	4.11	4 3/4	91½	66	45	47	49	37	26	27	28	176½	314.	3946.	4261.
2.72	.11	2.31	4	85	41	45	45	31	26	27	27	17	103	160.	3661.	3822.
4.81	.28	3.65	6	76	55	67	66	55	29	37	36	30	174	327.	4704.	5031.
7.37	.29	5.95	4	80 3/4	90	86	86	88	44	42	43	46	176	360.	6580.	6941.
.96	.07	.87	8	91	12	10	10	11	6	5	5	6	48	93.	812.	906.
3.53	.13	[illegible]	5	[illegible]	[illegible]	48	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	130	251	[illegible]	[illegible]
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
4.49	.23	[illegible]			23-	20	20	37	18	16	16	28	94	122.	126.	1383.
3.21	.17	2.18			47	44	44	39	25	23	23	20	133	252.	2760.	3012.
100.	5.29	68.03			1080	1118	1115	1112	595	626	623	624	3149	5710.	70162.	75872.

Column:

1 *Per cent of total labor cost of the house.*
Example: 6.41% of all labor cost is for form setting

2 *Percentage of 1 house completed this week.*
Total figure on bottom row of this column shows equivalent of 5 houses were completed

3 *Percentages of houses of whole project completed.*
Comparison of cols. 1 and 3 shows how much of that item is completed

4 *Number of houses completed by each crew this week*

5 *Total houses finished to date by each crew*

6 *through col.* **9** *shows dollar costs per house*
for each item
for this week,
previous week,
total to date.
and these can be compared with estimated costs

10 *through* **13** *shows number of man-hours per house for each item*

14 *Total man-hours worked this week*

15 *Total payroll this week for each item*

16 *Total dollars paid up to this week on entire project*

17 *Grand total paid to date*

meets the estimate. This latter gives each foreman a practical interest in helping other foremen to meet schedules.

Another key figure that Hughes watches is the total of col. 10 compared with col. 13. For the week illustrated it showed that only 595 man-hours were used per house against an estimated total of 624. This was a clear indication that the job was moving well, despite the fact that a few crews were over their estimates for that week.

Total cost predictions

Another great advantage of this system is that Hughes can predict quite accurately what he will have to spend to finish a project. Every month his accountants study col. 5 to learn how many houses are still unfinished by each crew. That number is multiplied by the average cost for that item. That week, for example, the form setting crews (top row) had finished 94 houses, had six to go at a cost of $75 each. (Actual average costs are used, not estimates.) So the additional cost of form setting is $450. This is done for each of 23 items.

On August 25 his projected labor cost figure had come out to $111,518. The actual cost when the job was finished proved to be $117,153. Hughes believes an error of only $6,635 on labor for 100 houses is a small one. The difference was due to the driveways he added. A flood also raised painting costs.

Greatest practical benefit has been that the system helped to cut costs by disclosing weak spots in construction methods. Before Hughes started one group of more expensive houses, his foremen estimated that all the form setting could be done in 160 man-hours. But the first houses took over 300. Here was clearly a trouble spot. Hughes personally spent over a month on this problem. By working with his superintendents and foremen the man-hours were cut to 175 and after three months to 160. Hughes credits his accounting system with alerting him to the trouble, and with keeping him informed as to weekly progress.

Another great benefit is in improved relationship with the mechanics. Every man, and especially every foreman, feels he is part of the organization. The men believe that they are being let in on management. They know what labor costs are per house. They share in profits when things go well. Here is an incentive system that works.

How much does the system cost?

This accounting system (of which only the labor costs have been illustrated, the materials cost form is very similar) costs Hughes about $20 per house. One man and two clerks spend a portion of their time in keeping it up. Some builders who do not keep such elaborate records believe they are not worth their cost but Hughes gets his money's worth.

The two units of the house, left, strike a contrast in form, structure and materials. The long, low service wing supports its roof on parallel stone walls salvaged from an earlier structure. A heavy timber frame carries the wood panels of the main unit.

BARN-FRAMED HOUSE shows the plan freedom, structural clarity and fast erection possible with wide-bay heavy timbers

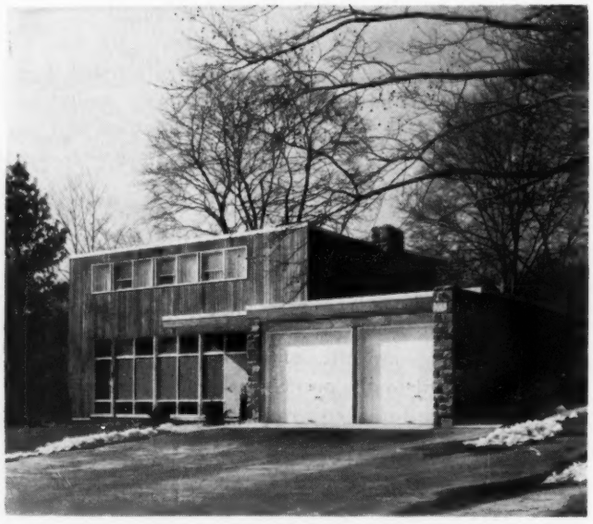
LOCATION: Bryn Mawr, Pa.
VINCENT G. KLING, architect

With steel for house building in short supply, wide-bay timber framing is getting more attention. This house at Bryn Mawr shows some of its interesting potentialities for architects and builders. (It is the winner of both New Jersey and Middle-Atlantic States AIA awards.) In its own way, the heavy wood of the skeleton offers many of the advantages of steel:

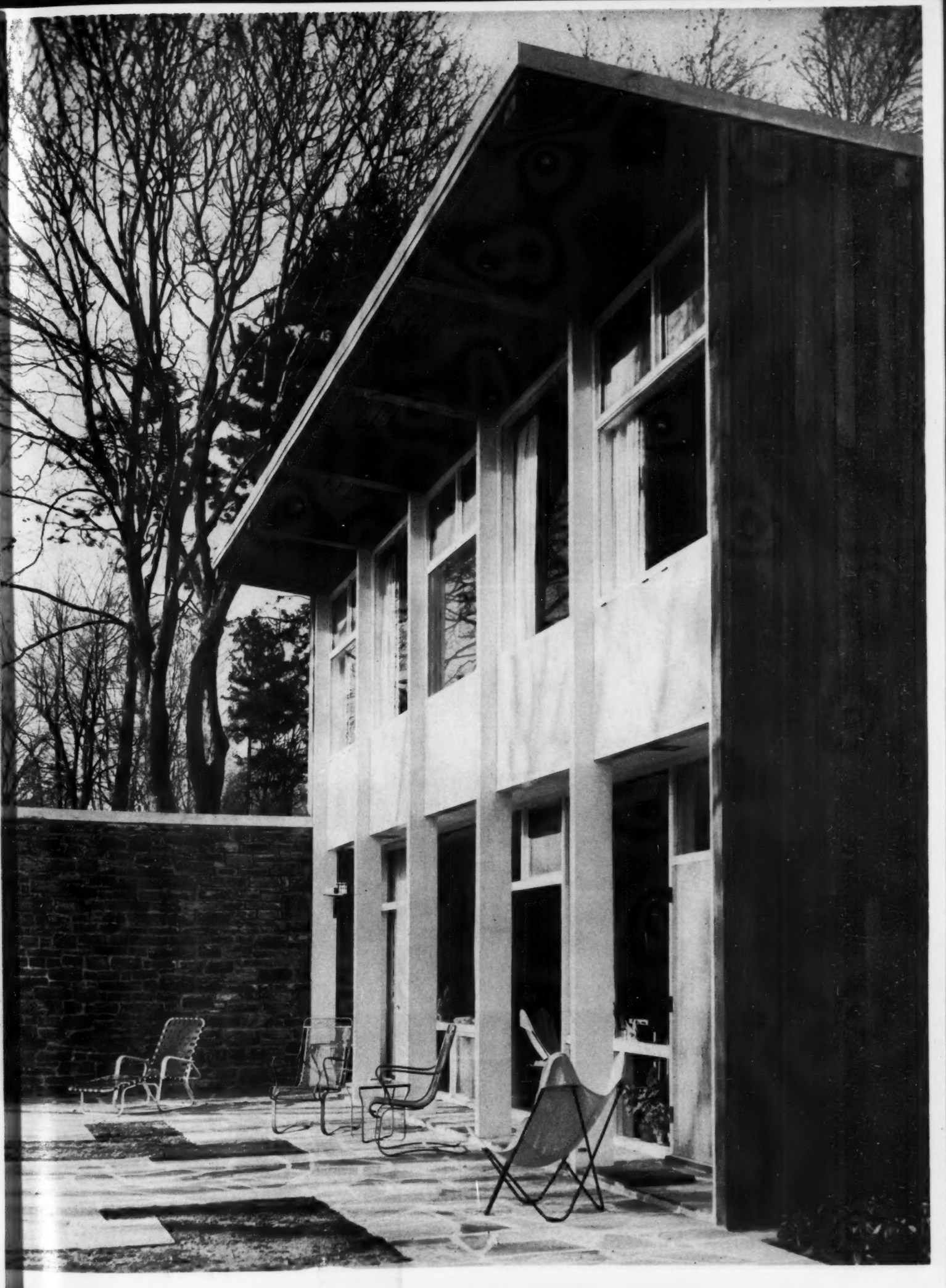
- The wide spans and openness of plan which it makes possible.
- The coherence of a system that *is* as simple as it looks.
- The dignity of large-scale window divisions.
- The speedy erection (framing for this house went up in 2½ days with never more than three carpenters on the job).

In this house, architect Vincent G. Kling has expanded the more familiar single-story post-and-beam frame to double-story height, somewhat in the manner of a heavy timber barn *(see drawing p. 90)*. The 8″ x 10″ and 12″ beams frame into 4″ x 12″ posts at 6′-6″ intervals along the open window walls, running 10′ and 21′ to a transverse steel beam. On the west (where Kling recessed the living-room window screen) the posts rise clear to the roof; on the east (where the ribs of the house are partly concealed) he broke the posts with the second-story floor platform for the sake of economy. The two side walls are stud curtains with the steel beam independently supported on pipe columns. Carpenters like the system because it gets them under roof in a hurry. There are some drawbacks. Kling estimates that framing costs run about 10% higher than for a conventional job. The exposed plank-and-beam ceiling left no space to hide pipes and conduits beneath it and the space above was given over to a 2″ concrete heating slab poured on the planks. Kling finally hung a plaster ceiling over the entrance and dining areas, used the cavity for recessed lighting and utility crossover. As a design tool, however, the system is hard to equal. No conventional wood frame yields the same unifying structural cage, the same freedom in shaping space.

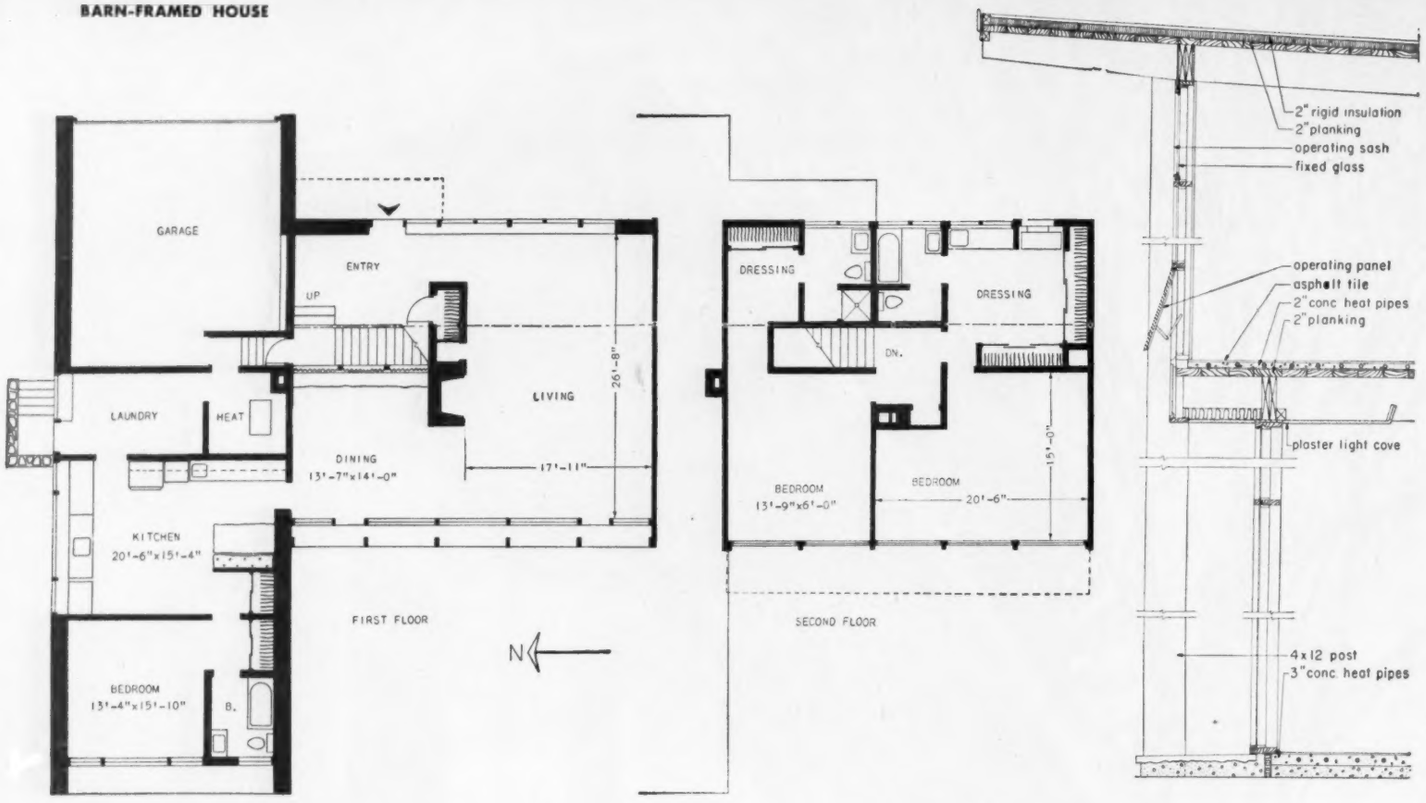
Photos: Lawrence S. Williams



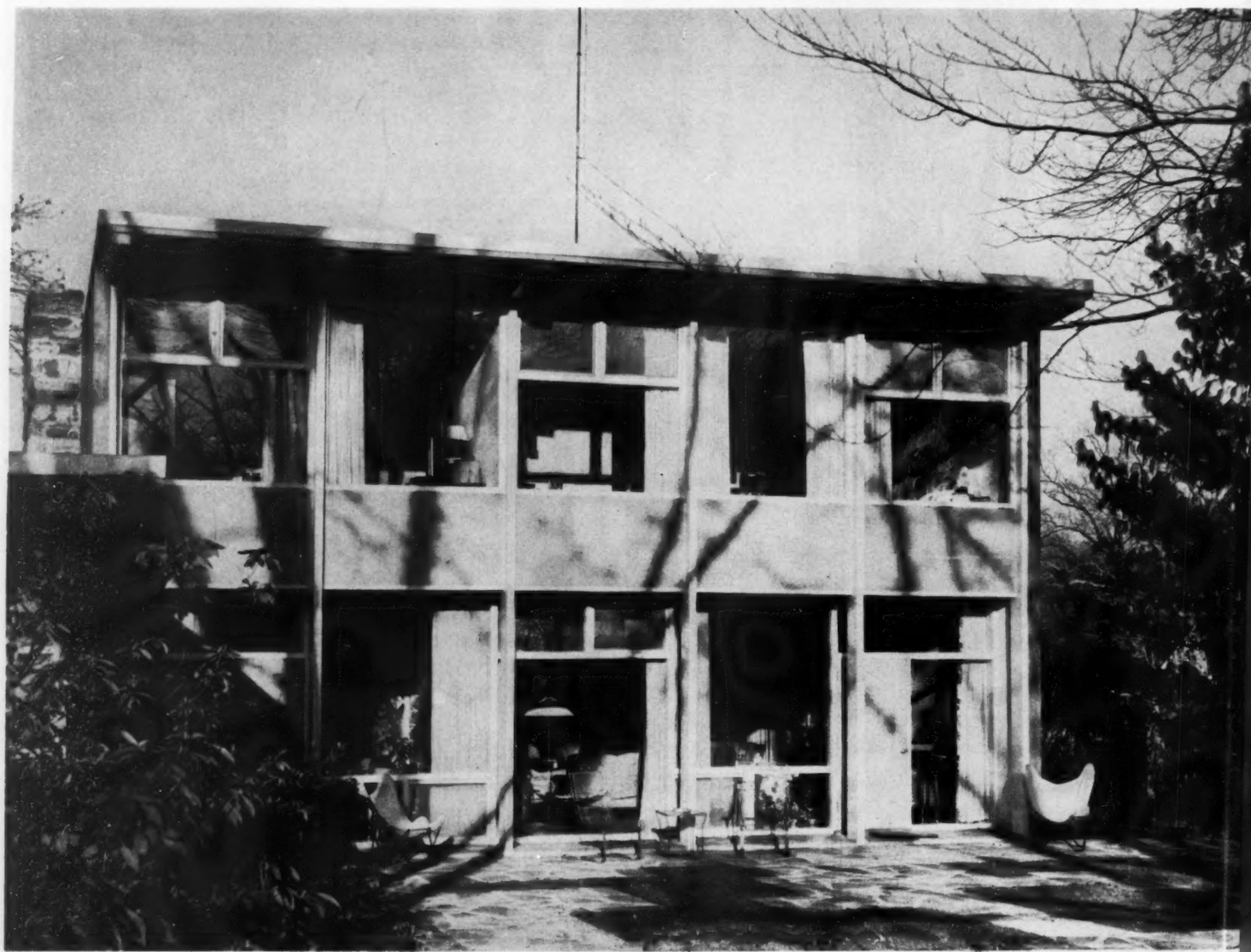
On the entrance side, above, stock projecting sash repeat the 3′-3″ module of the door. Toward the terrace, opposite, glass extends from post to post across the full 6′-6″ span. Solid panels are plywood painted cobalt blue. Siding is mahogany (secured at a discount).



BARN-FRAMED HOUSE



Plan of lower floor shows openness possible with wide-bay wood frame. Plywood panels under alternate bedroom windows swing open for ventilation (see below and above right).

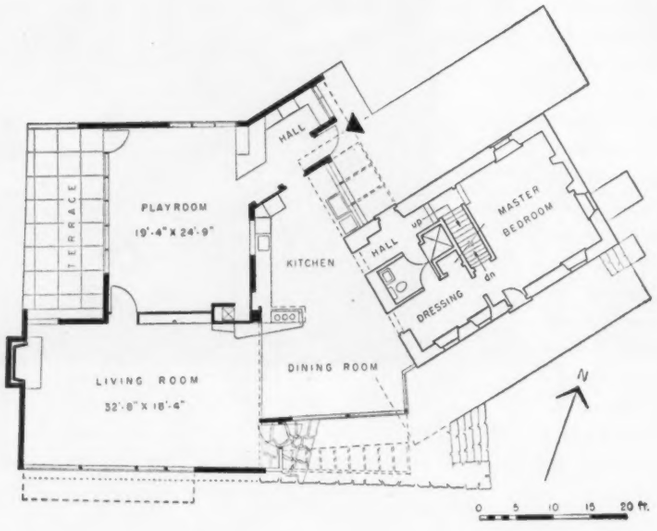


Fireplace wall indicates division between entrance, living and dining areas. It also supports staircase (below right) and is sole prop for the ceiling aside from perimeter walls.

The stairs rise alongside a translucent glass screen and over the chimney wall to the floor above. Oak treads rest on triangular metal brackets screwed to 4" x 6" stringers. Oak parquet squares set in mastic make a "floating floor" over the radiant-heated ground slab.

In the two-story unit, the east and west walls are, in effect, a ready-made framework in which to hang windows. Kling capitalized on this fact by confining all fenestration to these two sides and spacing the posts to take stock sash. The side walls are solid, which keeps the framing simple and presents the neighbors with an expanse of handsome mahogany siding (but it also blocks cross-ventilation). In the window walls he mixes plywood and glass panels, both fixed and operating, in a way that is effective as well as original. Awning windows, top and bottom, give him the workings of double-hung sash plus the neater look of casements. But his system is better than either for the vents are close to floor and ceiling (to catch cool ground currents and exhaust rising warm air) and the fixed sections in between are large enough to discourage paper-riffling drafts. At the entrance, the fixed panels—they are plywood—also keep out curious glances. The terrace windows face toward a beautiful copper beech and into the western sun. Here Kling has set back the living-room windows to secure an overhang which also serves to emphasize the curiously classic stateliness inherent in the heavy-timber skeleton.

The plan is trim and logical in spite of strict limitations imposed by reusing the foundations of an old carriage house (even the ground-floor heating pipes were laid out on the old cement slab). The main unit of the house is where the carriage rooms once were; the service wing stands between the stone walls of the horse stalls. The court has become the terrace. The fabulous old timbers (some were as much as 20" deep) are what suggested the barn-type frame.



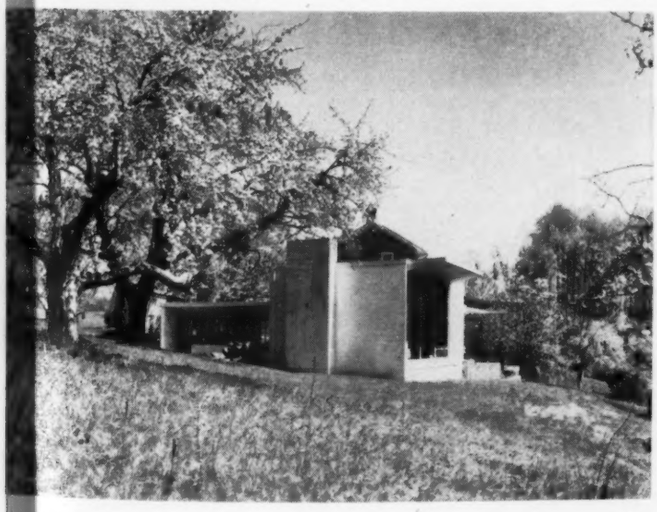
New glass-walled living and dining rooms, angled out from original farmhouse, face south for a view of apple orchard and valley below. Plan, left, places kitchen at focal point of new open layout, with control over playroom, living and dining, ready access to bath, halls, bedrooms.

LOCATION: Phoenixville, Pa.
OSCAR STONOROV, architect
MAHLON ROSSITER, contractor

NEW LIVING SPACE adds light, view and open planning to an old farmhouse

Photos: Cortlandt V. D. Hubbard

Below, high living room rises above lower playroom and terrace, left



For anyone concerned with building a new house or remodeling an old one, this contemporary addition to an old Pennsylvania farmhouse has a handful of ideas to offer. Behind its novel details lie two main concepts:

- *To gain satisfactory space for big, livable interiors, it is often far better to add a new wing than subtract old partitions—to do the remodeling* outside *the old house, where you can have a freer hand.*
- *Old and new design and material* can *be brought together without conflict or schizophrenic effects, and without "judging" the new to look like the old.*

The original house, typical of the homes local farmers built themselves in the mid-19th Century, is a solid, straightforward structure of native fieldstone, with windows punched through in the regular spacing necessary to masonry wall construction.

Just as the old served its builder's way of life, the new wing is a frank answer to the present owner's requirements, honestly translated into materials and methods available today (e. g. cheap, mass-produced concrete block, steel lintels and plate glass that permit longer ceiling spans and larger windows).

Once the flexible, informal character of the new space had been decided upon, the architect was free to provide a solution tailored to the dimensions of his clients' lives. It was possible to swing the plan around to take advantage of prevailing summer breezes, winter sun and a long valley view to the south and southeast. This meant facing living and dining areas 30° away from the line of the old house, which had been built when orientation to a view counted somewhat less than it does today.

Pivot-point kitchen

Besides a closer contact with the outdoors, the young painter and his wife who bought the house wanted a new living room high enough for a sense of spaciousness and comfort and "a kitchen nice enough to eat in." As can be seen in the floor plan *at left*, the new kitchen was designed to be the hub of family and social activity, opening from the geographical center of the plan in all directions: north to the front hall, south to dining and living areas, east to bath and master bedroom, west to the playroom through an "observation window." Conversely, four exterior doors lead in from the perimeter of the layout for easy circulation.

Thus the kitchen becomes an open control point, merged with dining-living space for everyday use and large informal parties. The stove's top burners are installed in a free-standing counter, which helps the lady of the house join family or party while cooking, and incidentally acts as a sideboard hot plate from which guests can help themselves. (Drawbacks: a noisy exhaust fan in the hood above, some cooking odor through the living areas.)

Separated visually from kitchen-dining only by a change of ceiling height—and a sliding open-weave linen curtain when necessary—is a formal living room with high 12′ ceiling. Here a dark walnut floor and a big pink-tan marble fireplace wall create a nice contrast of mood with the rough fieldstone wall and the quarry tile floor of the more intimate, low-ceilinged dining area.

Polished formality is the mood in the big living room: dark walnut floor, walls of plate glass, pink-tan marble and white plaster. Large opening at right, with pipe col[illegible], is filled with bookshelves and door to playroom. Hea[illegible] combines radiant baseboard pipes and warm air regist[illegible]

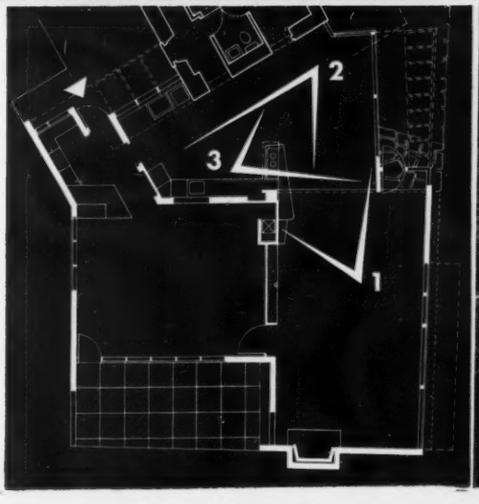
While in the planning stage, the decision was made to use the old house exclusively for bedrooms. Like most 19th Century homes, its interior was broken up by a central stair into small rooms that would have required extensive removal of partitions and rearranging of stairs to adapt to modern requirements of uninterrupted living space. So the old sitting and living rooms on the ground floor were transformed into master bedroom, dressing room and bath, the second and third floors left intact as sleeping quarters for the four children, aged 1½ to 11, and one servant. The structure made an ideal "dormitory," leaving the owners to plan their communal living areas outside the walls of the old house.

Construction of the addition was kept simple to reduce costs: concrete block foundations and exterior walls, whitewashed: wood joists and crawl space where the land slopes off under the living room; a double floor slab on grade under the playroom side. In the playroom, the concrete block interiors were simply whitewashed; rubber floor tile was added later when the exposed slab proved too cold for comfort. Big sliding glass panels on the south living room wall were eliminated from the original design in favor of less expensive awning-type vents. Cost of the new 1,900 sq. ft. wing was kept under $10 per sq. ft.

View 1—*Warm informality of dining area contrasts with living room opposite. Ceiling drops to a more intimate height, floor changes to red quarry tile and furniture to dowel-back chairs. Rough fieldstone exterior left exposed inside helps tie the old farmhouse to the new wing.*

View 2—*All-wood surfaces eliminate gleaming white "kitchen look"*

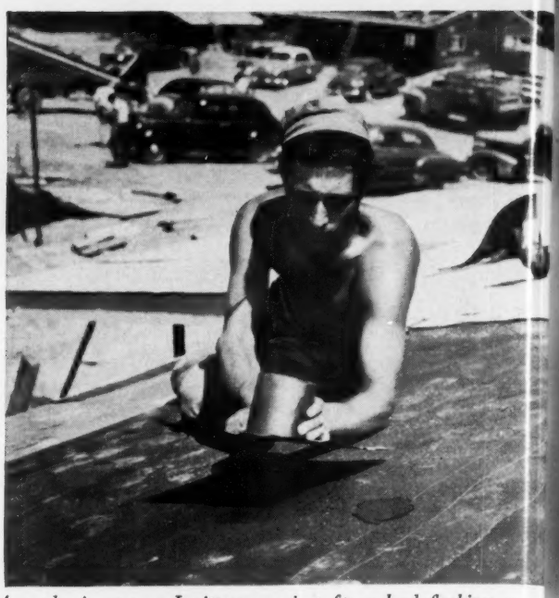
View 3—*Dining area has its own generous view to south, sliding glass wall to bring in breeze. Heavy plank table on pipe legs is lighted by two spots in ceiling. Free-standing stove's top burners, foreground (with corner of its hood projecting at top) separate the kitchen from dining space.*



What's wrong with plumbing?

by Irwin Jalonack

Plenty, says Levitt's chief engineer, who claims we could reduce metal by 70% and labor by 30% if plumbing codes were really modernized



A mechanic at new Levittown project fits a lead flashing collar over short vent, permitted by new National Code.

Don't look now, but your plumbing is stagnating. It has been for a good many years, because in the hands of plumbers and municipal officials plumbing has been shrouded in mystery.

Theoretically, plumbers should know about plumbing, and so should local building officials—but they don't. Here's why:

A plumber is a person who has learned to apply the tools of his trade (wrenches, calking irons, etc.) and has learned about the operation of faucets, ballcocks and gauges. But his understanding of pipe sizes, venting and basic design has been picked up from existing practice. His qualification for a license—if he has one—is generally a working knowledge of a code which in itself may be based on past practice.

The plumbing inspector, or board of examiners on plumbing, is again a plumber or group of plumbers. Here and there a few enlightened souls have had some academic training in hydraulics and are also involved somehow in plumbing design. But theirs are voices in the wilderness: there are perhaps 100 rule-of-thumb plumbers for every one with some basic knowledge.

Result of this general lack of fundamental understanding is that plumbing today is practically as it was 50 years ago. I don't mean that there haven't been a few changes in fixtures (more color, mixing faucets). But by and large, there is no progress in the basic design and layout of plumbing systems.

Among those who do not understand its basic hydraulics, the standard argument against modernizing plumbing practice is that it has served our fathers well so why take a chance on anything different? This attitude cannot be condoned when metals and manpower are short. We must not accept the waste of the very things that give us our power and scale of living. It is high time that plumbing in this country be based on present-day technology and that people with know-how be given a free hand to make a plumbing code which could be useful nationally. Instead, their knowledge is so weakened by compromise with existing practice that even the proposed National Plumbing Code falls short of the maximum possible improvement.

In the one-family house of modest proportions:

1. *The house trap is an extraneous hunk of metal.* Most plumbing codes call for a house trap and fresh-air inlet. The function of a trap is to prevent obnoxious gases from entering habitable areas. These gases may form in any of the waste lines in the plumbing system within the house, in the street sewer or individual sewage disposal unit and be carried to the house by the building sewer.

The house trap is imposed as a second trap on the entire system to give double protection. This it does not. If the house trap is working and one of the individual fixture traps fails, an unpleasant smell will be immediately noticeable because of the putrefying material found in the waste pipes between the individual traps and the house traps. On the other hand, if the house trap fails and all the individual fixture traps are working, objectionable gases cannot escape into any of the rooms of the house. Thus, these hunks of metal serve no useful purpose.* The fresh-air inlet provides a release from the blocking action of the trap seal for the air being pushed down the system by flowing sewage and it too may be eliminated when the house trap goes. These traps slow down the flow of sewage and are actually detrimental to the plumbing system.

The proposed National Plumbing Code does not require the installation of a house trap or inlet. This statement is qualified, however, by adding that the trap may be omitted in new community homes but should be installed in those cities requiring a trap when new buildings are being constructed among old buildings so equipped. Some towns that have adopted the National Code have revised it to call for house traps and fresh-air inlets in all cases.

2. *Pipes are bigger than necessary.* There is a common superstition that the bigger the sewer pipe, the better. 'Taint necessarily so. Take the lowly sink waste, usually a minimum of 2″ in diameter. The pipe from the sink to the sink trap is generally 1½″ in diameter. Aside from the fact that at best it is a little difficult to fill a 2″ pipe from a 1½″ pipe, the fact remains that the extra velocity usually achieved with the smaller pipe results in a scouring action. In my own experience as a plumber (over a period of 25 years) and in my father's time before me (back to the 1880's) there have been far fewer stoppages in 1½″ pipe than in 2″ pipe.

On the matter of the size of the house sewer from a house with not more than two bathrooms, a 3″ pipe actually serves better than a 4″ pipe. Yet we have such inanities as ordinances being changed from a 4″ requirement to a 5″ requirement. How stupid can we get?

---

* *The problem of the house trap, some experts contend, is not gas leaking in from the sewer but the possibility of a real back blast from the sewer. If only one house on a street had no house trap, that house would get the whole blast. Where sewers are overloaded, as in Detroit, the house trap does makes sense.*—Ed.

Medium weight cast-iron soil pipe costs 60¢ per ft. for the 3″ size, 90¢ for 4″ size and $1.25 for 5″. The change from 3″ to 4″ costs 50% more, which is significant in a large project. Cost of fittings would increase proportionately; lead for joints would also increase. Labor is about the same for all sizes.

Most ordinances require cast-iron soil pipe. Shouldn't materials such as asbestos cement piping—which is used for mains carrying water under *high* pressure—and bituminized pipe also be suitable for transmitting sewage at *no* pressure? These could be used both indoors and out for straight runs at a saving of about 50% over cast-iron. Strength is more than adequate and longer lengths and ease of cutting provide many advantages.

We took advantage of the code. The plumbing code that governed the construction of Levittown, N. Y. was a typically antiquated code, unchanged in a quarter of a century. It called for a 4″ building sewer for a one-family house, a 4″ house trap with a 4″ vent, and other nonsensical waste. Fortunately, the chief plumbing inspector was an exceptionally able individual. Although we had to use a 4″ building sewer, he let us use a 3″ stack vent. This permitted us to use the standard 2″ x 4″ partition. We were also allowed to use stack venting—economical, since it let us group fixtures close to the main waste.

Actually, the code provided for stack venting: connecting each fixture directly to a single vertical waste pipe. Because of a peculiar interpretation, however, each fixture had been vented separately. After we led the way, other builders followed the lead. If we had built under the proposed National Plumbing Code we could have saved even more. For instance, the house sewer would have been a self-scouring 3″ instead of 4″. The portion of the stack which serves only as a vent could have been reduced to 2″, except for a short stub projecting through the roof, which in cold climates must be at least 3″ in diameter.

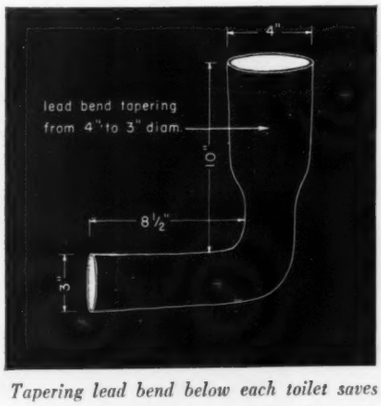
Improved techniques helped too. Where a 4″ water-closet waste outlet connects to a 3″ waste line, it has been customary to use a 4″ lead bend and taper it down to 3″ where the two connect. Fortunately, we were able to get Robert Glaser of Glaser Lead Co., to create a 3″ lead bend that was opened up to 4″ at the water-closet connection, at a saving of about a dollar for each hookup. Not much in itself but it adds up in a large development. We also developed an almost foolproof lead roof flashing (*opposite*). Under the proposed National Plumbing Code, the vent terminal extension through the roof can be reduced from the usual 12″ to 6″ and, as I understand it, the code will be revised further to reduce this extension to 3″ or 4″ since there is less danger of frost closure in cold climates with this shorter projection.

As long as we have been able to come up with a few new ideas, isn't it reasonable to expect manufacturers to do the same? There has been practically no change in the "guts" of a toilet tank in 40 years. It is still noisy and requires considerable service. The tank still sadly lacks esthetic appeal. A wall-hung closet, designed for economical installation, would be a step forward because the entire area under the toilet bowl could be cleared and the bowl set in a lower, a more healthful position.

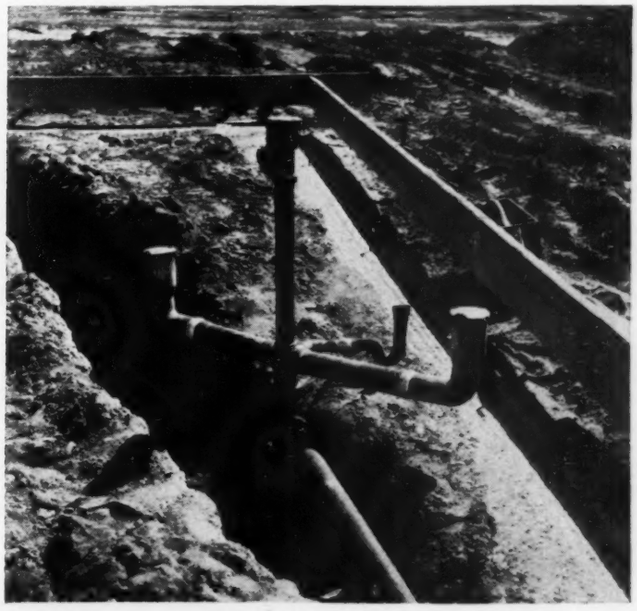
There is still gold in them there hills. For the plumbing system as a whole, I believe it is possible to save another 30% on material and labor. Included would be a reduction of the size of the house vent to 1½″ pipe, using a steel tube or acceptable substitute and protecting it with one of several available finishes other than the zinc coating now required. This vent resists a negligible pressure so its wall thickness would be dictated only by corrosion and rigidity requirements. Savings could be made too in the water-supply piping. In general, it could be reduced one size depending on the available water pressure. This would reduce the time it takes for hot water to reach the tap and would also lessen the amount of hot water in the pipe between draws. This last point would account for a savings in the hot water wasted by cooling in the pipe. None of this streamlining hinders or in any way harms the proper operation of a plumbing system. In many instances it improves operation and reduces maintenance.

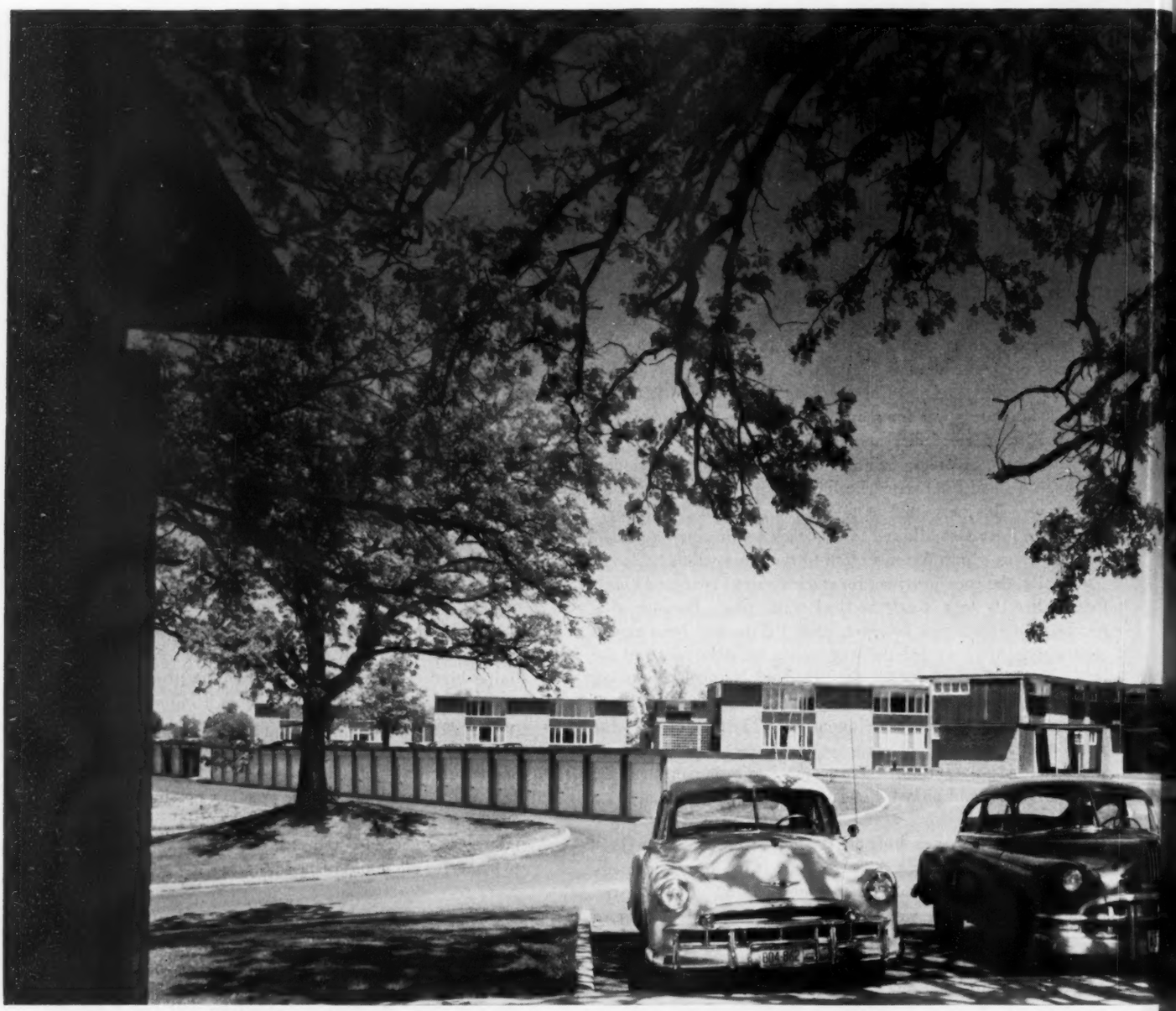
Future improvements will come as a result of increased study of the practical hydraulics of the plumbing system. It has been said many times that old-time practices persist to give mechanics as well as contractors a large amount of labor, but I believe that more often ignorance and lack of understanding are principally to blame for maintaining the status quo.

"The National Plumbing Code Illustrated," 188-page booklet by Vincent T. Manas, executive secretary of the National Plumbing Code Committee, has just been published. It has 184 illustrations, 18 tables on piping plus other material to simplify and interpret the new code. Builders and architects will find it helpful. Manas Publications, 4513 Potomac Ave. N. W., Washington 7, D.C. Price $3

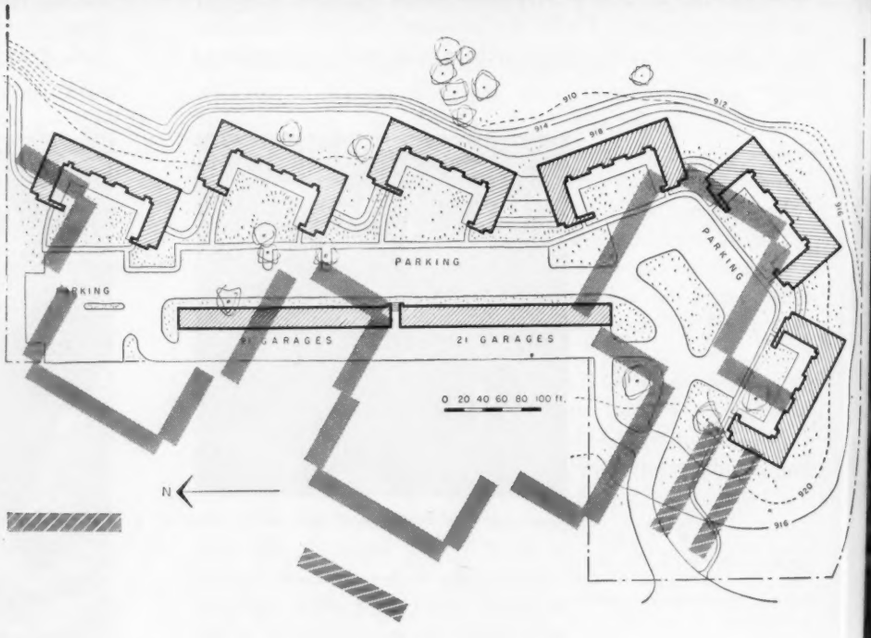


Tapering lead bend below each toilet saves 4 lbs. of lead per fixture. At right, Levitt plumbing tree. In foreground, kitchen drain to sewer. Vent rises in center, with toilet connections right and left, bathtub at rear.





LOCATION: Minneapolis, Minn.
GERHARD W. BRANDHORST, architect
SEBCO, INC., and ENACO, INC., contractors
A. D. GODWARD, sanitation engineer



Valley Village site plan and what regional FHA office suggested instead (surprinted). In FHA plan you drive along rim of ridge, houses are set back, most windows face away from view. It calls for 12' cuts and much expensive fill. Garages (gray hatching) require additional access drive.

Trees and staggered siting lend pleasant informality to drive

Entrance court hardly hints at three stories and view at the rear

VALLEY VILLAGE

Middle-income garden apartments demonstrate how far you can go on sound design

Of the thousands of garden apartments launched by FHA's now-defunct 608, architect Gerhard W. Brandhorst's Valley Village belongs to the few worth a close look. Among its assets:
—A site plan that pays attention to trees, slopes, and vistas
—Rooms that are more than minimal
—Buildings that don't look like barracks or catalogue colonial
—Structures as simple as conventional building can make them
—A low-maintenance plan that makes it possible for one man to take care of the day-to-day upkeep on a 108 unit project.

When the FHA meets a hill

One of the project's best features, an excellent site, was almost squandered by FHA standardization. Located in suburban Golden Valley, the tract is a mile and a half from the Minneapolis city limits. There are main roads along two sides, and when the owners' ultimate plans for the property are completed, there will be a shopping center next door. The land spreads over the top and east slope of a wooded ridge and faces the city skyline on the downhill side. There are natural barriers on all four sides: highways to south and west, a creek at the foot of the hill to the east and on the north a single-track railroad (which hauls grain in harvesttime).

For these nearly perfect conditions Brandhorst devised a plan *(opposite)* in which buildings are strung out like beads on the crest of the ridge with entrances on the west and windows focused firmly on the easterly panorama. The access drive enters on a clover leaf off the crossroads. Garages are on the return loop of the drive, tucked unobtrusively into the downgrade where the ridge begins its westward descent. The plan calls for very little grading except around the buildings, and by straddling the hillcrest Brandhorst's apartment houses gain an extra half-story of apartments on the downhill side. The plan has its flaws. Two of the buildings are too close together, and the narrow ridge has room for only 42 garages (this is offset by ample parking space).

The FHA's regional office in Chicago could see little merit to the plan. Their counterproposals are surprinted on the plan, *left*. Comparing the two one might assume they were based on different surveys. However, at least the general character of the land was known, for their representatives had visited the site. To achieve the specified flatness would have meant slicing as much as 12′ of earth off the ridge and pushing it around for fill. The trees would have had a rough time too. The rest of the score card stacks up:

	FHA plan	Brandhorst plan
Apartments	94	108
Garages	48	42
Parking	63	108
Feet of drive	2,700	1,935

Fortunately, local FHA officials backed Brandhorst's plan and with their help it was finally passed.

When tenants have a choice

During the year since its completion, Valley Village has set an enviable record with its tenants—the lowest rate of turnover of any 608 in Minnesota. This means more when you consider that Minneapolis no longer has a housing shortage in this price range —$86.50 to $96.50 a month depending on orientation and location. This is what the customers get for their money:

- A bedroom, living room, dining area, fully equipped kitchen, bathroom and three or four closets. The dining and bedrooms are 20% larger than FHA minimum requirements
- Big windows facing a view that is worth looking at
- Baseboard radiant heating
- Sound-stopping walls between apartments
- Play and drying yards, basement laundry and storage lockers
- The privacy of separate outdoor entrances.

Designs on a view

By linking the apartments in a U (the unit plan allows for a number of combinations) Brandhorst was able to make the court inside the U an entrance area for the entire building. It is not the usual court, however, for none of the major windows face into it or share a dreary prospect of more walls and windows. Once inside the apartments you are virtually alone with the view. The bottom apartments have the added advantage that from them you can walk outdoors and make the lawn a summer living room.

A minimum of maintenance

The private entrances are part of a program to minimize upkeep costs and aside from major repairs and snow removal, Brandhorst has succeeded in trimming the job to a size one man can handle. There are no public halls or stairs leading to the apartments. Windows have built-in screens and stormsash to eliminate the seasonal shift. Originally even heating was to have been supplied by individual gas units, but the local gas company refused to service "commercial" buildings.

Structurally Brandhorst has not ventured into new paths, but treads the old ones with uncommon directness. The unit plans are designed to use stock-size materials throughout, even framing is of stock lumber lengths: 20′ joists, 16′ studs. To save time, construction went ahead to the point of sheetrock on ceilings and outside walls before partitions were installed. On the exterior, window walls alternating with broad brick panels also had a salutary effect on costs. With no openings to interrupt the clear masonry expanse, masons just filled in between brick molds.

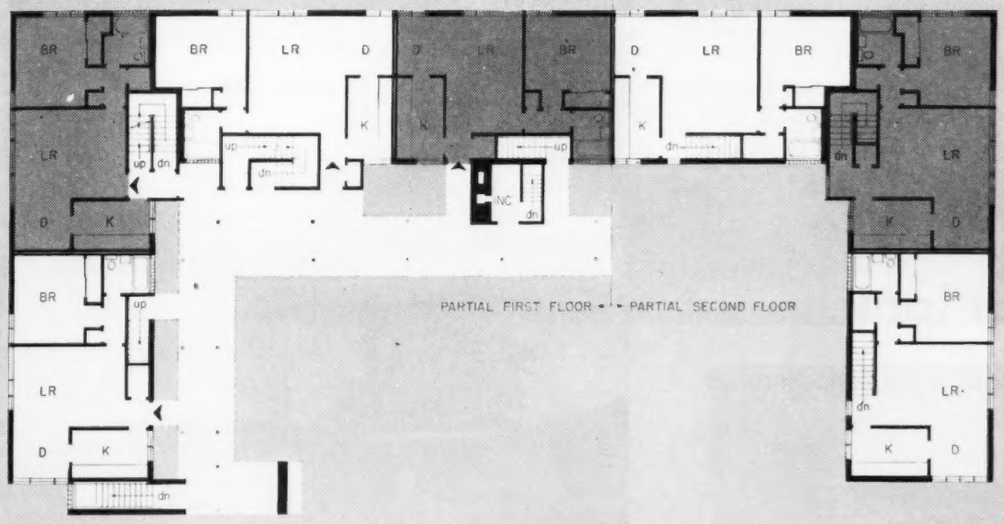
Covered walk replaces interior halls to cut upkeep. Tenants assume maintenance for their own private entrances and stairways. Note the outdoor letter boxes.

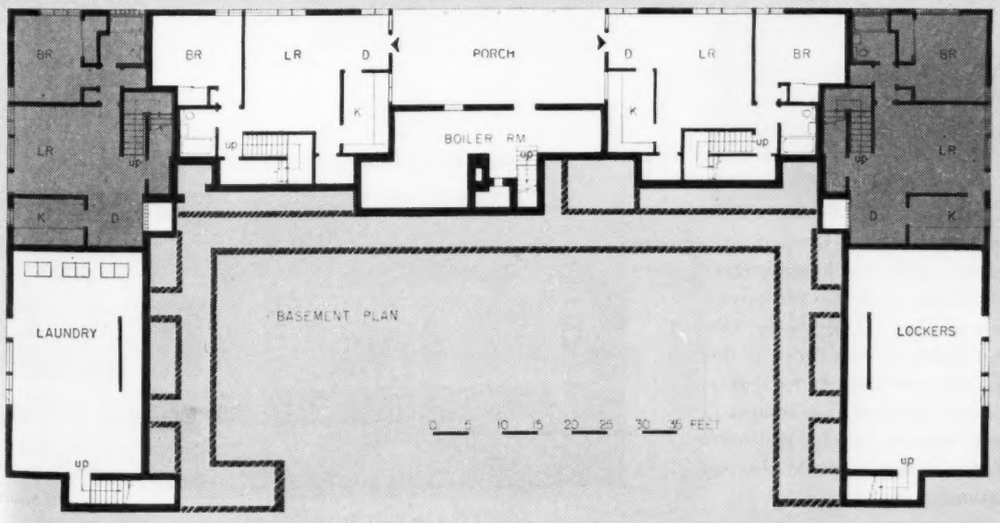
Apartments have better-than-average room sizes, open planning and a treetop view to the Minneapolis skyline.

COST BREAKDOWN

Excavation, grading, etc.	$16,000	Refrigerators	$11,418
Concrete walls & footings	59,847	Kitchen ranges	19,278
Masonry & structural steel	34,572	Kitchen cabinets	6,200
Damproofing	1,332	Plumbing	75,000
Concrete floors & cement	10,638	Heating	49,500
Rough carpentry	138,882	Electric wiring & fixtures	34,876
Misc. millwork & carpentry	15,480	Shades	1,500
Windows, glazing	37,020	Garage doors	2,723
Doors, frames	44,280	Building permit	800
Stairs	7,800	Well, tank, pump (2 sets)	9,686
Misc. iron	2,766	Curbs, walks, sewage	26,600
Sheetrock	38,730		
Insulation	13,200	Structures	$780,000
Roofing	20,826	Land & improvements	98,608
Sheetmetal	50,196	Carrying charges, fees, legal, organization	148,993
Painting & taping	4,866		
Finish hardware	16,200	TOTAL COST	$1,027,601
Tile & bath accessories	12,795	Mortgage	893,900
Linoleum, asphalt tile	2,475		
Weatherstripping, calking	14,514		

Brick veneer panels emphasize orderly window groupings. Spandrels are redwood siding. Slope beyond the lawn was left in a natural state.





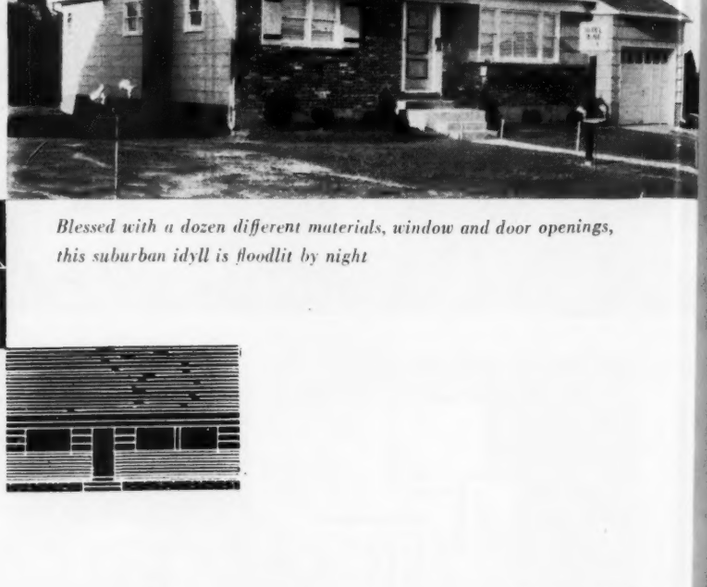
ADVICE TO THE APPRAISER

In April we reminded appraisers that FHA's rule book suggests a low rating for houses that suffer from the "banana split"—which it defines as "the so-called shirt front or one sided treatment . . . use of false effects, or the unusual combination of materials."

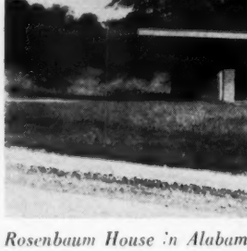
But that is no reason why builders and their architects should feel some compulsion to use only one facade material. Every builder knows that a little variety helps make sales. And the right use of different materials can actually improve the design instead of cheapening it.

To state it rather simply: If a facade is sliced *vertically* (or, worse than that, quartered or broken up like a sampler), the house will look short and squat; it will also look as if it had been designed by half a dozen different people who were not on speaking terms with one another.

Barrios



Blessed with a dozen different materials, window and door openings, this suburban idyll is floodlit by night



But if a facade is sliced *horizontally* (and if this is done well) it should look long, low-slung and sleek. It should also look expensive and big. And, finally, it might also fit better into the streetscape, especially if its neighbors have that horizontal look also. An appraiser, of course, should be concerned with such matters as the neighborliness of a house since this affects its value. This message to the FHA appraiser, then, deals with

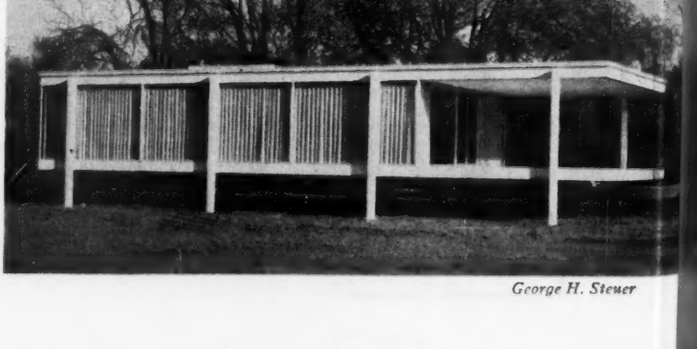
the horizontal look

or another way of slicing the banana

When you look at a house facade you should be able to answer several questions without trouble. They are:
—Where is the floor line?
—Where is the sill line—and is there one dominant sill line?
—Where are the window and door heads—and do they line up?
—And where is the roof line?
You would expect the answers to be fairly simple. Yet a glance at almost any development will indicate that it is anything but that: many facades look as if they were fronting for the most intricate, split-level maze ever conceived by the human mind. Appraisers can be pretty sure that a *simple-looking* facade indicates that a lot of designwork has gone into it—that a *complicated* facade has had practically no benefit of designer.

There is, for example, the apparently effortless house (right) of master architect Frank Lloyd Wright and the deceptively simple-looking glass and steel house of Mies van der Rohe (Oct. '51 issue). It is not suggested that builders ought to copy this house; neither should they spend five years on every design. But on the next few pages H&H hopes to show that competent architect-design pays off in terms of cleaner facades and more coherent streets—which means, of course, that it should also pay off in terms of higher FHA evaluation.

G. E. Kidder Smith



Rosenbaum House in Alabama. Frank Lloyd Wright, architect

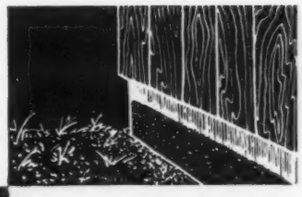
Farnsworth House, Fox River, Ill. Mies van der Rohe, architect

George H. Steuer

First, take a look at the floor line

Every sculptor knows that he has to put a figure on some kind of pedestal to make it count. The platform on which most builder houses are constructed is so clearly defined that it is actually a lot of trouble to conceal it: after all, most builder houses have a continuous footing all the way around, beneath the exterior wall. The footing may be of block or concrete; in any event, it has a sharp and clean sill line on top. Below that line is wet construction (including a slab, in most cases); above it is a wood-framed house.

Supposing the continuous footing were allowed to show on the exterior, with the frame wall projecting beyond it by a minimum of about 1½" (thickness of sheathing plus siding); there would then be a neat and crisp shadow line all the way around the base of the house—instead of the kind of ragged edge that is likely to result from having the exterior finishes come down to the grade. Architect Johansen's small house shows how effective a shadow line can be.



Ben Schnall

New Canaan, Conn., House. John Johansen, architect

Imandt

Some other architects (such as Gardner Dailey and Chiarelli & Kirk) have demonstrated how a builder could make a very strong feature of that shadow line, at least on the two long sides of his house. The way he could do this is to recess his footings and cantilever his floor joists (if he is using floor joists) a foot or so outward. That kind of feature is especially helpful in a flat-top, where *parallel* base and fascia lines on all facades are a must to keep the house from looking lopsided.

Dick House, Geyserville, Calif. Gardner Dailey, architect

Seattle, Wash., House. Chiarelli & Kirk, architects

Dearborn-Massar

Second, check whether his sills line up

Most builders are faced with the problem of putting at least four very different types of openings into one facade:

—a high-sill bedroom window (bedrooms being so small that wall space under the windows is needed for furniture);

—a medium-sill bathroom and kitchen window (these two sill heights generally can be lined up without trouble);

—a low-sill living-room window (or glass wall); and

—a door (or a series of doors, including one for the garage).

There are at least two ways of bringing some order into this chaos. The first way is to slice your facade into three horizontal bands; the second is to divide it into two such bands.

1. A facade divided into three bands would give

a. a low sill line along the floor for the living-room window wall;

b. a 32″ high, medium sill line for kitchen windows (as well as *some* bedroom, bathroom and dining-room windows);

c. an 80″ high, high sill line for strip windows in the bathroom and in some bedroom areas. And

d. a head just under the lintels, which would produce a continuous transom above all windows and doors.

Assuming the ceiling height is what it ought to be—8′03/8″, as urged by both the AIA and the NAHB—the transom height would come out to something around 12″. Architects Ain and Johansen (*see cuts*) have tried this with great success.

2. A facade divided into two bands would give

a. a low sill line along the floor of the living-room window wall;

b. a 42″ high, medium sill line for kithen, bathroom and bedroom windows. This would conceal bathroom and kitchen equipment (including backsplash for sinks); would be fine for bathroom windows above the tub, if the glass were obscure; and work equally well in a bedroom, where it would conceal almost any furniture produced today. And you will also get

c. a head line that could be determined either by the door height (80″), or else by the AIA-NAHB ceiling height (8′03/8″). If you take the head up to the ceiling plate, you might use extra-high exterior doors.

Ben Schnall

Sills and heads that don't line up make for incoherent facades

Julius Shulman

Mar Vista, Calif., Houses. Gregory Ain, architect

If a builder accepts one of these methods of slicing his facade, the 32″ or the 42″ high sill line can become a kind of waistline for the house. An appraiser looking for coherent facade design should check how well the builder has watched this line. . . .

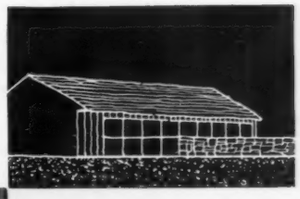
Check his waistline

Here are some ways used by architects and builders to accent the all-important waist of their houses:

Richards

Seattle, Wash., Houses by builder Albert La Pierre were designed by W. A. Wollander

1. Some have built a kind of "skirt" to reach from grade level up to the waistline (and have forgotten about the floor line altogether). To give the house a sense of being anchored to the ground this skirt is often made out of brick or stone. To give the house more horizontality—greater apparent length, in other words—the skirt can be extended beyond the end of one facade and turned into a low screening-retaining wall; and

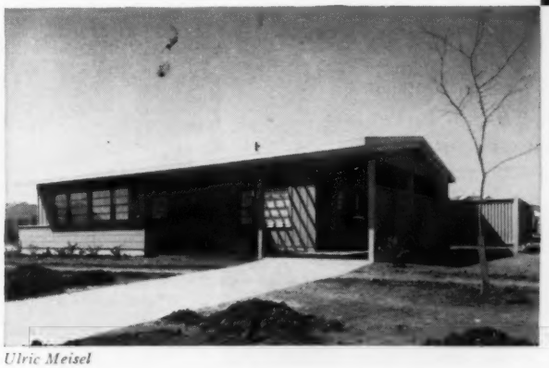


Night view of the La Pierre House

Freeport, L. I., Houses. Huson Jackson, architect

Ben Schnall

2. The waistline can be continued in a horizontal muntin bar (or rail) in any floor-to-ceiling glass walls used in the living area. Some designers have even repeated this horizontal stripe on the doors—although this is very hard to achieve successfully.



Dallas, Tex., Houses by builders Lewis & Lamberth and Laughlin & Silver were designed by architects Marble & Barnum

Ulric Meisel

Builder La Pierre's house shown on the previous page is a fine example of this approach. Architect Huson Jackson's very different facade shows the use of a strong horizontal—the brick screen wall—to make his house seem larger. The line of that wall is repeated in the muntin bar of an adjoining glass wall.

Target Photos

Rondal Partridge

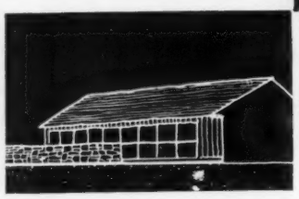
This New Jersey house shows
an attempt in the right direction:
a strong waistline,
muntin rails and heads that line up

San Francisco Houses
by Builder Eichler were designed
by architects Anshen & Allen.
An excellent example
of a strong waistline,
uniform sills and heads

And check his head

Most builders understand the structural advantages of having all window and door heads (and thus all lintels) continuous and on the same level. The illustrations used here indicate that the advantage to the facade in terms of looks is at least as great. There is no real excuse to have a door that is shorter by a mere 6″ next to a floor-to-ceiling glass panel. Architect Landis Gores (Jan. issue, '52) used 8′ high doors throughout his house, found that, even with luxurious detailing and finishes, they cost only $22 apiece in the small quantities he required. On the other hand, his savings from avoiding the complicated framing and plastering needed around a 6′8″ door in an 8′ wall were hard to calculate, but probably made up more than the difference in cost of doors. As for looks, the pictures tell their own story.

Ben Schnall



Uniform lintels
give Johansen's house an orderly look

Finally, check his roof line

In a future article we plan to discuss in some detail the importance of the roof line as a stabilizing element in any house or street facade. For the moment we will simply mention half a dozen points to watch in evaluating the design of a roof, for the way the roof looks has a lot to do with the apparent length of any house facade.

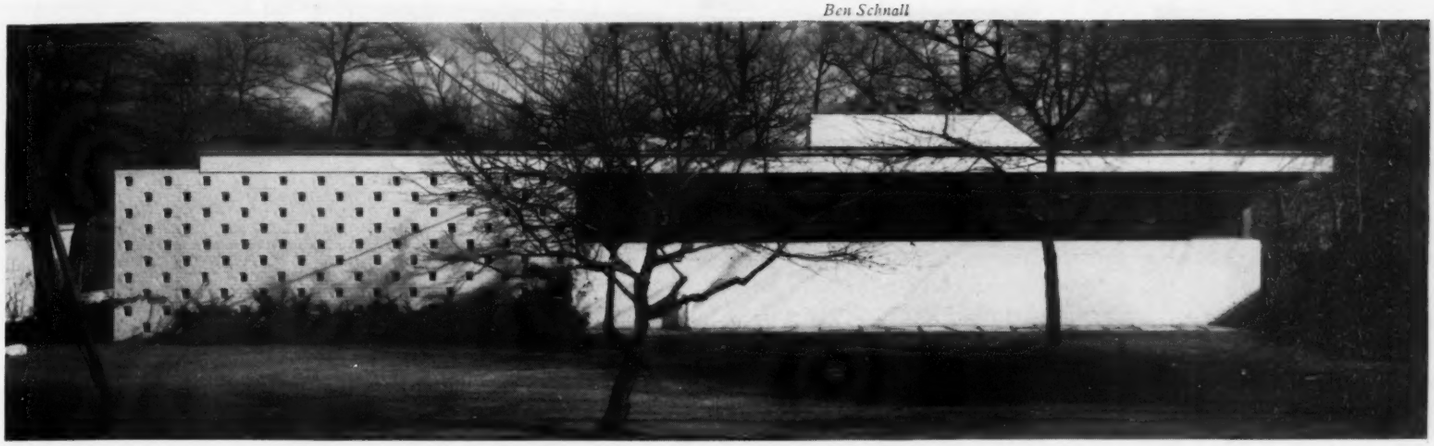
By its very nature, the roof is a horizontal element. To exploit that horizontality to the fullest should be the aim of any designer of builder houses. Here are various ways the designers have tried:

Ben Schnall

Broad fascias
of architect Jackson's houses
create street continuity

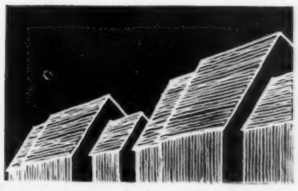
▸ In a flat roof, they will sometimes make the fascia as broad as possible, paint it a distinctive color (generally white) to contrast with the blue or gray of the sky (against which it will be seen) and with the wall materials below. Good designers also make the gravel stop and flashing as sharp and crisp as possible—a ragged silhouette seen against the sky can make the whole house look shoddy.

Ben Schnall



Pack House, Scarsdale, N. Y. Marcel Breuer, architect. Horizontality achieved with strong fascia, even sill line

▸ In flat or pitched roofs a deep overhang is often used to create a strong horizontal shadow line, helping further to accentuate the length of the facade. In a pitched roof, such overhangs may be stopped by broad fascias, but quite frequently razor-edge roof will be more effective, especially when seen from the side. (Note: Appraisers should look twice at overhangs of different depths along one facade; unless designed by a master, they are likely to chop up the facade as badly as any combination of different veneers.)



Even small jogs in a roof will decimate a facade

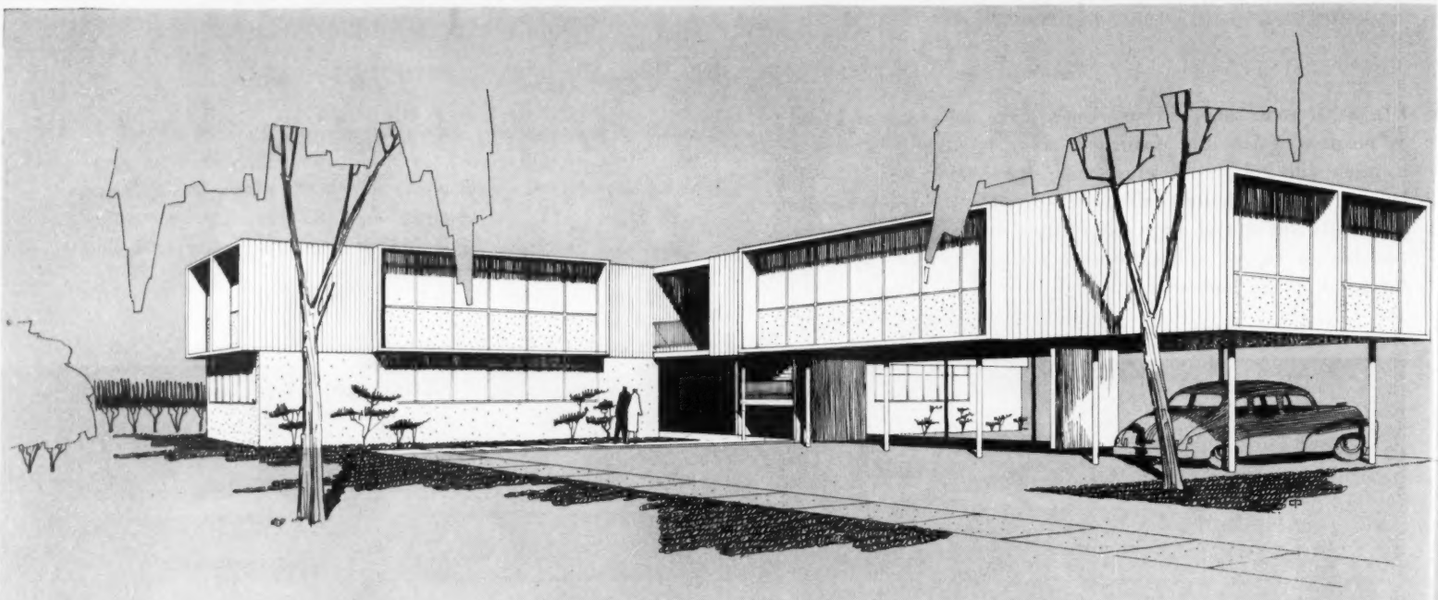
Barrios

▸ In pitched roofs over small houses, most good designers will keep the ridge even. If they don't, the silhouette of the street is likely to look like a rollercoaster, and each individual house will have as many humps as a camel.

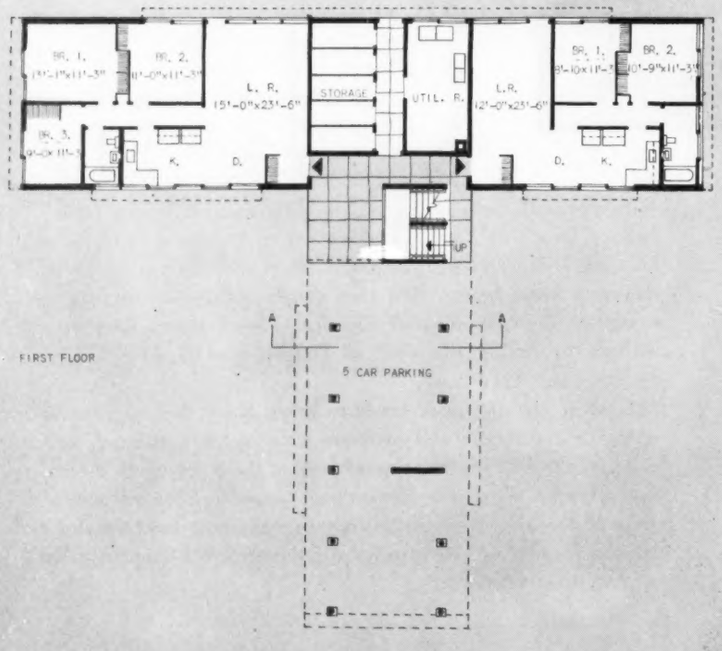
▸ Finally, in a pitched roof a dark color may help to "hold down" the house and tie it to the ground, which is another way of making it look more horizontal. The pictures on these pages illustrate the effectiveness of broad fascias and simple roof lines.

Naturally, all these devices alone will not produce a better-looking facade or a better-looking street. But the devices listed here are sufficiently flexible (and suggest enough variations on the same basic house) that they can be used, incidentally, to overcome the monotony of identical houses set in rows, and without producing the kind of hodgepodge we were talking about in our April issue.

But, while the appraiser needs to know about these devices in order to understand and evaluate a facade, few nonarchitects are likely to be equipped to make use of these devices in *designing* a facade. These are not esthetic cure-alls; they are merely some of the tools an architect may (or may not) use to produce a good facade. It will also help if the architect happens to be a good designer.

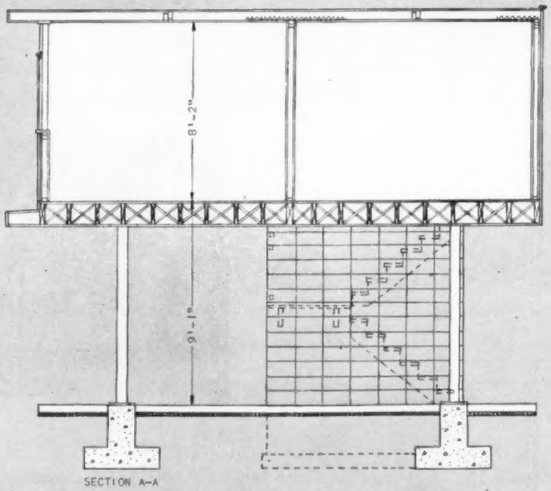


SECOND FLOOR



FIRST FLOOR

A radical departure from the usual traditional design in Wherry Act apartments, this contemporary five family unit contains two-, three-, and four-bedroom apartments. Plans will be altered to provide an extra bath for the largest apartment if the tenant will agree in advance to pay extra rental charges. All terraces have steel mesh fences.



SECTION A-A

Last minute change of plans reduced units 2' in each direction. Apartments are now 22' wide. Second floor apartment is supported by 5" steel pipe on 16" x 10" concrete plinths. "Wet wall" from this apartment is of load-bearing concrete block. Each tenant gets private storage room, but laundry and drying machines are communal.

Privacy at close quarters

T-shaped plan eliminates common walls between apartments

LOCATION: Richland, Wash.

JAMES C. GARDINER, architect and land planner

BAUER CONSTRUCTION CO., contractors

In addition to the Army, Navy and Air Force, the Atomic Energy Commission has been eligible for Title VIII (Wherry Act) housing and its first project is just going into construction at Richland, Wash., the completely government-owned city that serves AEC's Hanford works. Meant to be a magnet for the trained technicians and scientists needed in the atomic energy program, the housing for Richland was deliberately designed to avoid the row house or barracks appearance, and to furnish rental housing for both apartment lovers and those who demand single homes with their own yards.

The contract for the first private rental housing development on land leased from AEC went to Portland, Ore.'s Bauer Construction Co., which had teamed up with architect James C. Gardiner to win the assignment over 15 other competing builder-architect teams.

For two sites on opposite sides of the city of Richland, architect Gardiner gave the construction company two distinctly different housing units:

1. T-shaped five-family apartments, with no common walls and soundproofed floors for greatest privacy and quiet.
2. Low-slung, two-bedroom single houses on slab floors, with perimeter heat and attached garages.

Space acts as soundproofing

One of the biggest objections to apartment living is the sacrifice of privacy. Too often, thin walls serve merely as sounding boards for irritating noises (and half-heard conversations). Through his ingenious T, Gardiner has eliminated all common walls from his apartments and has made them open on all four sides. Terraces and laundry and storage rooms in the head of the T serve as effectual dividers of apartments on the same level. Floors and ceilings (the only places the apartments touch each other) are acoustically treated to keep the sound transmission level low. Half-inch fiber insulation board and loose 2″ x 3″ sleepers are laid beneath subfloors, and on the underside of the 2″ x 8″ joists, ceiling rocklath is suspended by metal spring clips to thwart vibration.

Out of the weather

The ground-floor shank of the T functions as a garage for five cars, with the entrance to the five apartments completely under cover. Laundry and storage facilities are also contained at ground level beneath the second-floor terraces. These terraces, partially open to the sky through pergolas, are separated by T & G board fences which could be removed to create a 31′ x 21′ common balcony. Entrance to the terraces is from the living rooms, rather than from the entryway.

"Shadow boxes" extended 18″ from second-floor walls serve both as a weather protection and as a dramatic framing of the glassed areas and terraces of the upper apartments.

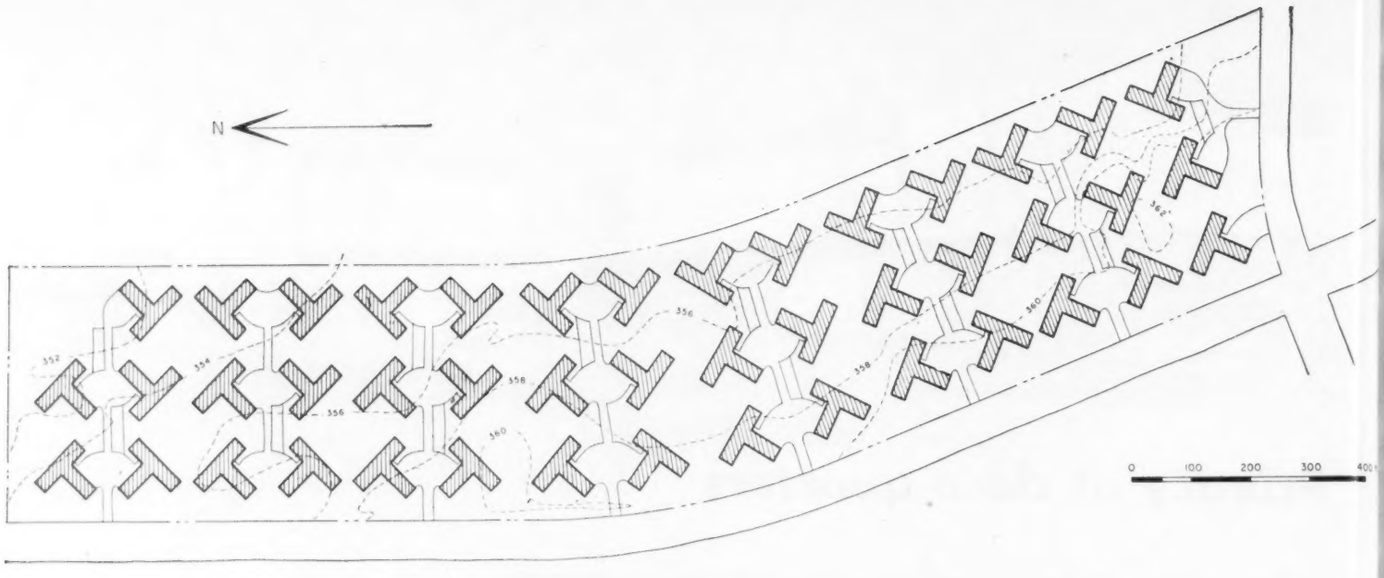
Four bedrooms for $100

Monthly rental schedules have not been set yet but tentatively are expected to be:

Two-bedroom unit	710 sq. ft.	$76
Three-bedroom unit	886 sq. ft.	$87
Four-bedroom unit	1,003 sq. ft.	$100

Figures include stoves and refrigerators in each apartment and community washers and dryers.

A perimeter warm-air heating system is installed in the apartments, with fiber ducts embedded in the ground-floor slab, and an overhead system in the second-floor apartments, each unit having its own heating plant.



Interior "commons" are furnished by calculated siting of apartments. Disadvantages of long, narrow site were offset by convenience of nearby shopping center and bus depot furnishing direct transportation to Hanford plant.

Uncommon commons

The site leased by Bauer-Day, Inc. (the operating company for Bauer Construction Co.) is a long, narrow, boomerang-shaped 24 acres near the city's major shopping area. With 44 buildings —220 apartments—on 24 acres, architect Gardiner wanted to avoid row regularity which would have given the site a cramped, crowded look. He evolved a complicated angling of the buildings which gives optimum solar orientation and also furnishes a maximum number of semienclosed commons which are expected to develop into protected play areas for children and community recreation space for all tenants.

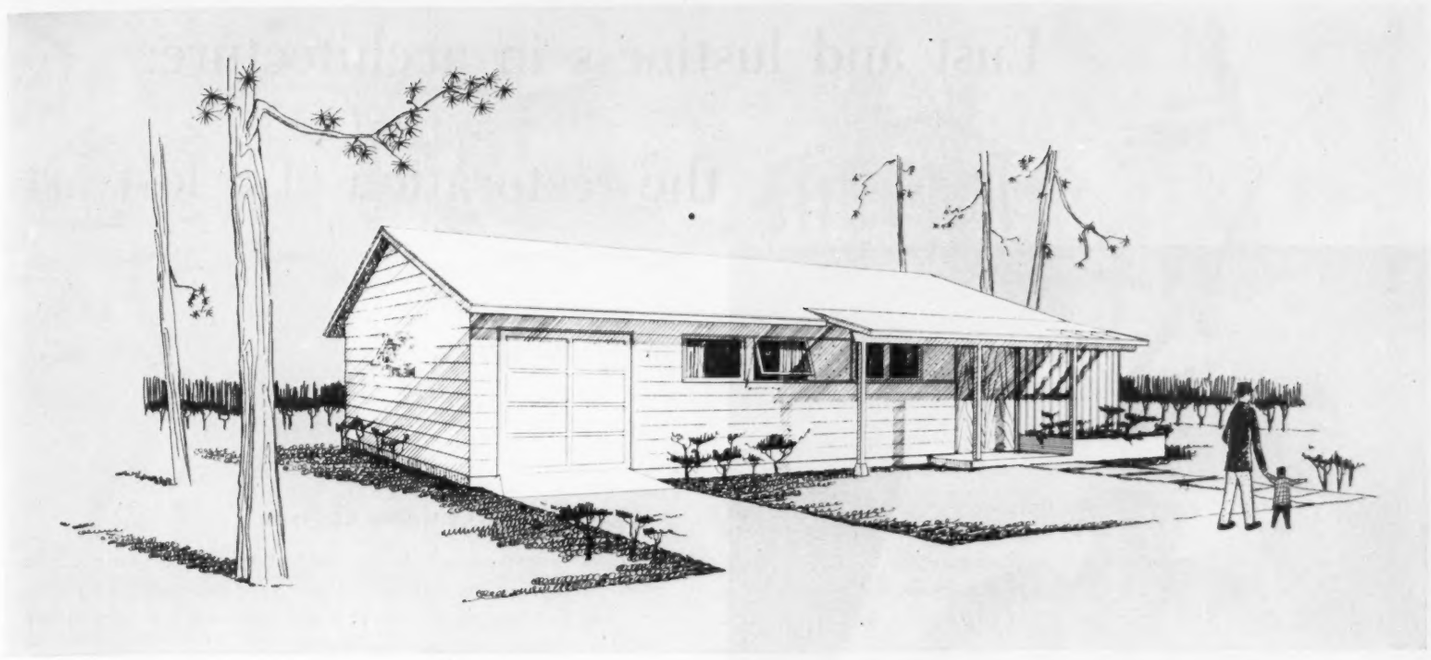
Garages win over basements

The 280 single houses will be built on a 42-acre tract overlooking the Yakima River, 2½ miles from the apartment project (both sites were obtained on 75-year leases). All houses will be 803 sq. ft., two-bedroom units, with attached garages, on lots at least 62′ wide, and will rent for $82. Original plans called for both slab and basement houses but unexpectedly high costs forced the dropping of basements and slight modifications of sizes. Freight charges in Richland are as much as 30% higher than in other West Coast areas, and subcontractors make extra allowances for "labor pirating," common in the Hanford working area. Impetus for substituting garages for basements was given by a survey of government-built housing that indicated that many Richland renters preferred the garage. Some had even put up garages at their own expense to protect their cars, even though they were living in rental units.

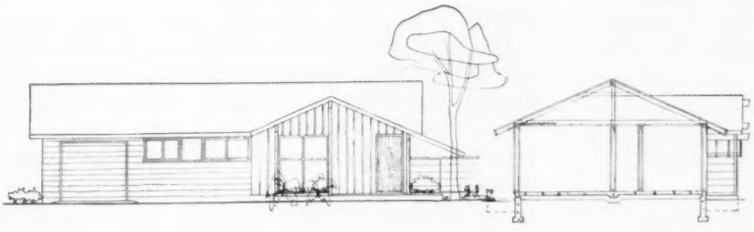
Government-owned city

The Bauer-Day project marks the first time that any nongovernment housing has been permitted on a commission installation (though some land was leased to private capital for commercial development). Wherry Act housing is attractive to AEC on two counts: good housing serves to attract needed technical personnel (who put housing high on their list of "musts") and the entry of private capital helps take AEC out of the real-estate business. Builder and architect have shown that this housing can be both good looking and efficient

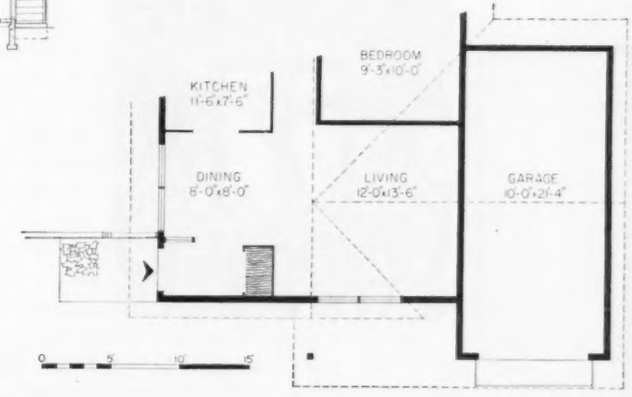
Lots for AEC's single houses average 62′-65′ wide, would leave little space between 47′ wide houses. Turning plan endwise makes house 14′ narrower and alternating plans gives extra space between houses.



Gardiner's houses suffered a size cut when building costs proved unexpectedly high. First scheduling had an almost equal number of basement and slab floor jobs, but former were dropped to cut costs.



Frame houses will have elevation changes and variation in garage location to give variety (see plan, right). As in apartments, houses will have fiber ducts cast in slab for hot-air perimeter heat. All the 280 houses are two-bedroom units.



Lust and lustiness in architecture: the restoration of a lost art

Meservey

The Colony house, Richard Munday. 1739

A review by ROBERT WOODS KENNEDY

Newport, R. I. is an American town in need of a miracle: to preserve Newport, which is a miracle town in itself. Let there be no mistake, every lover of architecture, of the sea, boats or bathing, or driving or looking, is in need of Newport. The miracle, the sweeping gesture needed, is to bring Newport's heritage and the American public together. Unlike Williamsburg's this is a tradition that never died, and its restoration would be stimulating, not merely archaeological. There is a lust and lustiness about Newport that supersedes innocence, an architecture of fun, a life of exuberance badly needed today in our stainless-steel moment of cliché design and blinking neon life. No "redevelopment" could be more rewarding.

A group of summer and year-round citizens banded together as the Preservation Society of the County of Newport is attempting such a gesture; and the book on *The Architectural Heritage of Newport Rhode Island** is in essence a survey of the city's capital in trade—which is history as its buildings have proclaimed and enacted it.

For Newport is, both architecturally and socially, one of the most fascinating cities in these United States. In one aspect, it is an 18th-Century seaport that has managed to retain nine early public buildings of great distinction, let alone a flock of houses. This part of town is small-scaled, crowded, poor, old, a little dank and more than a little quaint. In another aspect, Newport is Bellevue Ave., a row of fabulous 19th-Century palaces, the summer colony of New York's Four Hundred. Here the scale is big, though the palaces are almost cheek by jowl, and the atmosphere is exclusive, ostentatious and glamorous. In still another guise, the city is a great naval base, home of the War College, subject to inundations of ratings off the ships, and to the doings of men on leave from boot camp. Here is its third scale, the scale of the battleship, of the ammunition dump, of the 20th Century.

Such a city necessarily offers staggering social contrasts. It also seems like a sieve. People pour through it. The original owners of Bellevue Ave. are drifting away. Many of their palaces are vacant, or derelict, or are now owned by the Catholic Church. Henry James's "little old gray ladies"; the houses of the 18th Cen-

* *The Architectural Heritage of Newport Rhode Island 1640-1915.* By Antoinette F. Downing and Vincent J. Scully, Jr. The Harvard University Press, Cambridge, Mass., 1952. 241 pp., 230 plates. $18.50.

Newport Artillery *Ezra Stiles' house* *Zion Episcopal Church* *Second Congregational Church*

tury, are in a state of advanced decrepitude, having seen the passage, perhaps, of too many navy wives. Admirals and captains appear and recede, as waves on a beach, following the mutating laws of naval cosmology. And the grocers, gardeners, and upstairs maids, grown rich in Bellevue Ave.'s servants' halls, send their sons to college and thence to teach philosophy or physics, or to do business, anywhere but in the city of their birth. Newport is the kind of a town, rare in the US, where the middle class does not prosper.

Newport's heyday as a working city, with diversified commercial interests, was prior to the Revolutionary War. The British took it in December 1776, and kept it for two years and eleven months. During that time it lost over half of its population, and nearly five hundred buildings. Then came the French occupation, then the War of 1812, then the hurricane of 1815; finally New York, Providence and Boston took over its commercial functions. The city recovered from these blows, but only in the sense that a permanent invalid recovers from the crisis stage of a disease. It became a one-industry town, dependent for its existence, from 1840 to 1940, on the summer colony, and on the navy for the next few years. Now in the 1950's it is suffering yet other blows. The navy is receding, and the naval torpedo station was moved out. New York's Four Hundred are poorer and fewer. There remain a few feasible summer cottages, and the possibility of a war or of a destroyer repair facility—hardly a reassuring basis for the city's economic future. But there is also its superb summer climate, its natural beauty, and this fabulous architectural heritage—building after building to make one cry out with wonder.

Mrs. Downing, who is chairman of the *Survey of Newport Architecture,* is responsible for most of *The Architectural Heritage of Newport's* contents. In digging up not only the old buildings themselves, but information about them which might aid in their preservation and restoration, and which might interest and stimulate the visitor to Newport, Mrs. Downing has performed magnificently. The job is sincere, scholarly and thorough. One feels that no old deed, bill, diary, or Bible fly leaf that might possibly contribute has failed to be examined and recorded.

But, as interpretation and explanation of facts, the text leaves something to be desired. Events and people and buildings remain apart, as parallel stories, somewhat disconnected. How did people actually use their houses? What were they trying to *prove* with them? Names, dates, bills of materials, and street numbers cannot carry one far toward that urgent question; *Why* did Newporters do what they did? The groundwork has been laid for an evaluation of 18th-Century architecture as an answer to social, technical and economic pressures, but that question has not been answered.

This 17th- and early 18th-Century architecture of which Mrs. Downing writes is profoundly moving. Though most cities now contain precious few examples, still, this is the architecture against which we measure our current work. It is our past, our history, our conscience. Its scale, its size relationship to the human body is magnificently flattering. But the qualities that give it the power to move us are its restraint, its refinement and its discipline. It is a virginal style. Its surfaces are uninterrupted. No breaks or features mar its purity. It gains brilliance through its cornice and the myriad shadow lines of closely spaced clapboards. Up to the War of 1812 it was an architecture of natural wood. But at this point the craze for white paint hit Newport. The ostensible reason was, perhaps, to be more "Greek." But for such an architecture white, the purest of all colors, is perfectly appropriate. However, this accent on purity is, in another aspect, somewhat grim. Virginity too long continued becomes inhibition. Imitators of colonial tend to sex it up, to add frills, breaks, gables and the like, never seen in the originals. The attempt to be more humanly frail than the Puritans and early Quakers, yet to use their vocabulary, is foredoomed to failure. Architecture can no more combine virginity and a full life than can people.

Newport architecture of the period 1840-1915 became, by slow degrees, entirely promiscuous. The story of this period is told by Mr. Scully. His analysis of the 19th Century is more professionally concerned with style and its evolution than is Mrs. Downing's. It is less rich in the history of the place and of the people. Given these limitations, it is a splendid job. Mr. Scully comes to the point, and for this he deserves cascades of praise:

> *This period in American architecture, examined through the microcosm of Newport, may serve to clear away certain critical misconceptions concerning the architecture of the middle and later nineteenth century and help us to arrive at a more meaningful evaluation. Two generations of unfavorable academic criticism, based upon an academic point of view, have seen this period as "The Era of Bad Taste," as "The Battle of Styles," or as "A Confusion of Tongues." We shall see that these judgments are far from the truth and that the domestic architecture of these years was not only inventive, original, and full of life, but, through all its rich diversity, followed a course of development which was coherent and unified. In the larger historical sense this period brought to an end the long Renaissance complex of architectural development and laid the formal and philosophical foundation for the new architecture of the twentieth century.*

The Stick Style

Photos: (above & below) Meservey
George Champlin Mason's house. 1873-1874

The Shingle Style

Bancroft house. 1893

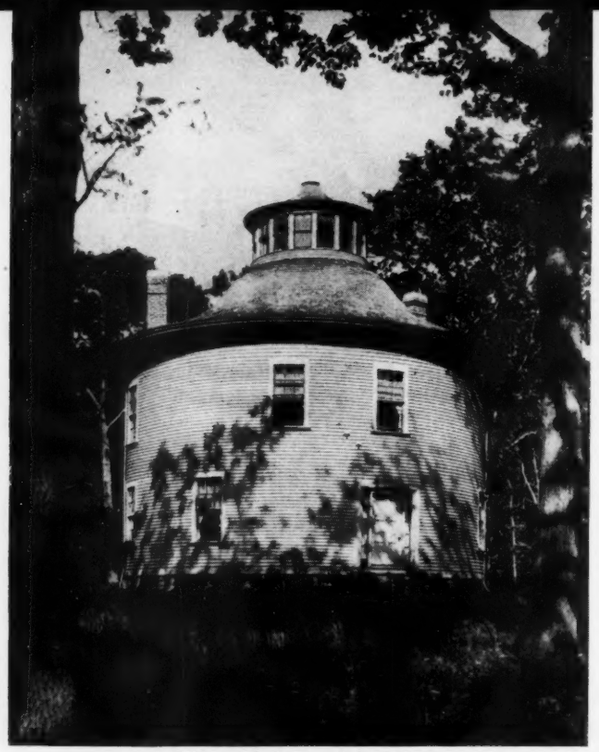
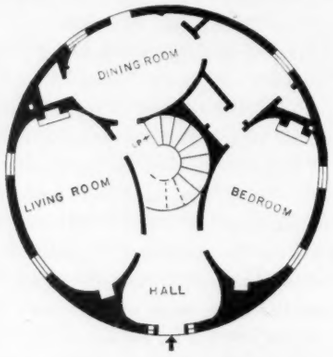
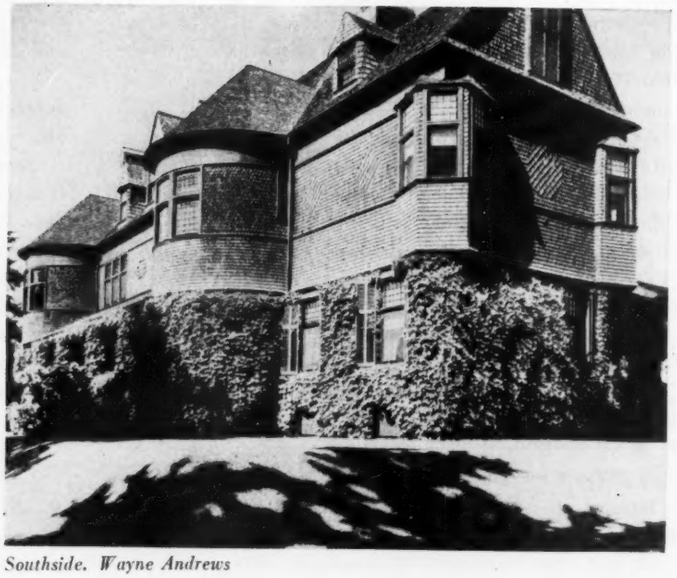
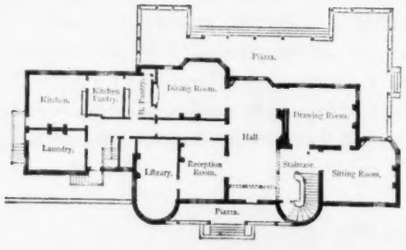


Photo: Covell; plan (below) drawn by Warren Oakley
Round house. Southwicks Grove, Middletown.
Built by Joseph Southwick, ship carpenter. About 1840

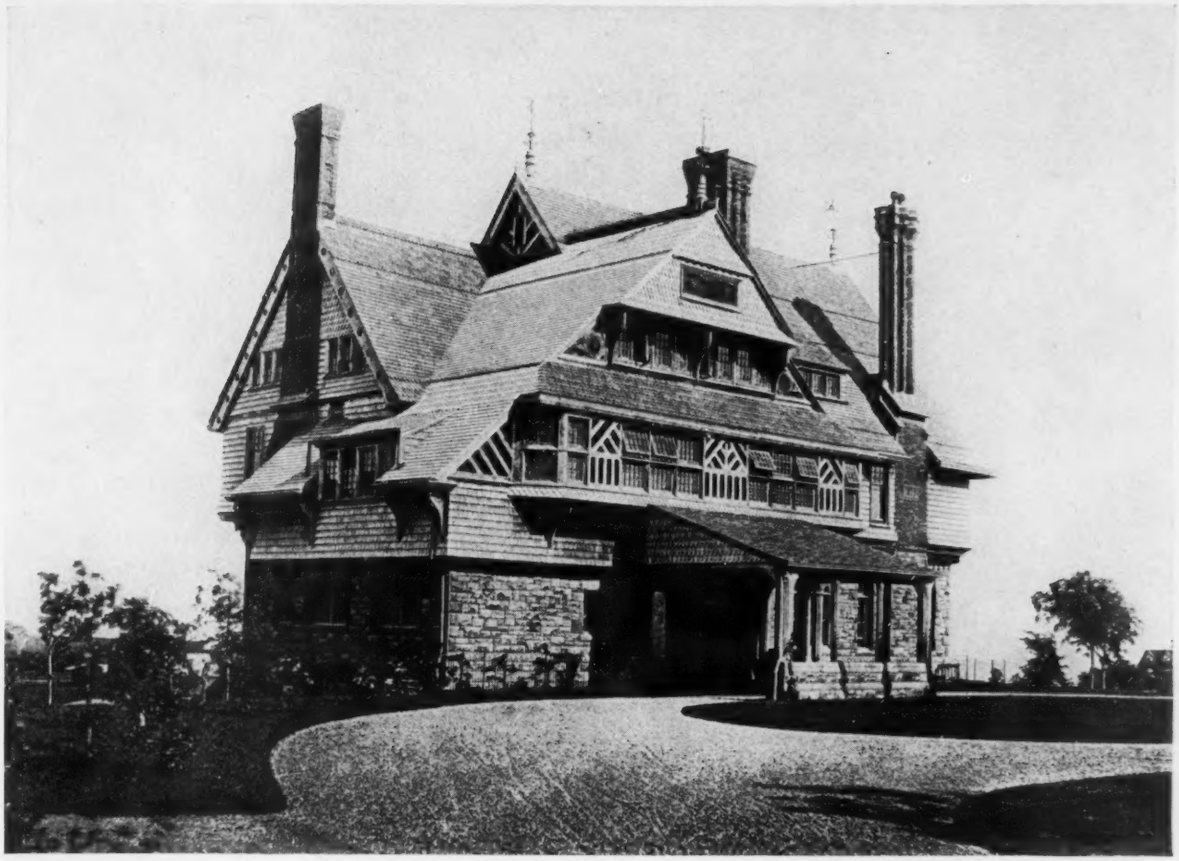




Southside. Wayne Andrews



Childs



Watts Sherman House. H. H. Richardson and Stanford White. 1874

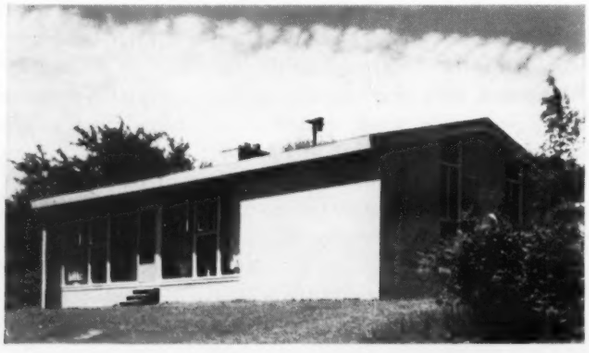
Mr. Scully calls the two major creative modes of the time the *Stick Style* and the *Shingle Style*. These epithets excellently describe those two Romantic moods which are, each in its way, both so American and so charming. The Stick and Shingle Styles retained, from the 18th Century, that shallowness of surface treatment typical of wooden buildings. But here all resemblance stops. The 18th-Century house was uneasily asymmetrical, and brooked no penetrations into its solid volume. The 19th-Century house reaches out in the form of piazzas, cornices and overhangs, accepts deep and dark reveals into its outer envelope, is purposefully asymmetrical, and glories in an open plan. Its atmosphere smacks of the East; of seraglios, Saracens and servants. With this went a magnificent inventiveness and a charming playfulness. The wooden towers, dormers, cornices, and porches, particularly of Newport's stables, are a never ending source of pleasure and amazement. Here is an architecture of fun without dogmatism or rigidity. Our current attitudes toward such elements as structure, plan and volume relationships stem directly from this period. But what has happened to our grandfather's exuberance and gaiety, to his ability to do without a book? Every modern architect should examine these Stick and Shingle houses, stables and pavilions, and compare them with his own current work. Has a fear of poor taste led to dogmatic insistence on rules? Has a fear of gaiety led to aridity? Has a fear of rugged individualism led to a vocabulary of clichés? It seems to me that the architecture of 19th-Century Newport, in contrast with our own, is almost stunningly alive, creative and exuberant. What has happened to our creative juices? Mr. Scully is not of much help with these questions.

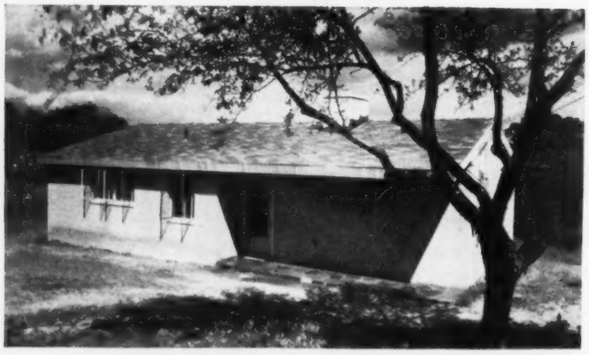
And language does much to mar the points at issue. We learn that: "The Watts Sherman house, therefore, is an architectural monument of great quality but also a stylistic one." But one entirely misses that sense of houses and horses and women and champagne used as pawns in a game of economic chess, so typical of Newport, and so important to the size, decoration, planning, and use of its 19th-Century architecture.

The limitations of the book, then, are twofold. First, the Survey is a tool, and is therefore not readily consumable by the average person. Second, the way in which it has been interpreted does not, somehow, put one in touch with the lively complex of incompatible miscellany that makes architecture. The book's virtues, on the other hand, are manifold. As a necessary step in the preservation of the art and economy of a city, it is fascinating. As an approach to the subject of restoration, it is infinitely superior to, for example, Colonial Williamsburg. As a repository of information, including some very evocative letters and diaries, it is altogether superior. As an interpretation of Romanticism, it is kind and just and appreciative. It is absolutely essential to every architect engineer, builder, decorator, planner and landscaper who, from now on, touches a hair of Newport's gray head. Most of all it should be examined by the solons of the state, the fathers of the city, the operators of real estate and by the makers of loans—that is, by all of those who have a financial stake within the city or on the Island of Newport. By extension, this Survey will be of interest to people with stakes in any city with a similar heritage and present. And, finally, the thoughtful architect will enjoy both it and the city whose praises it sings.

Patry Carr Studios

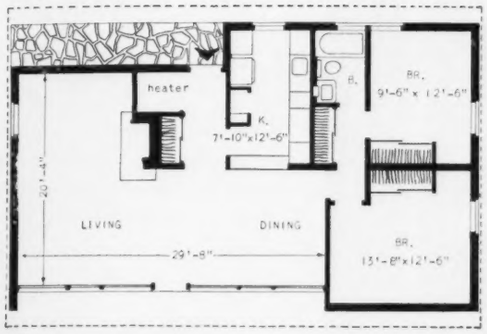
Flat-roofed plan (above) which offers a carport in rear at no extra cost was unanimous choice over gable roof (below) which has no car storage. Customers especially liked the floor-to-ceiling windows.



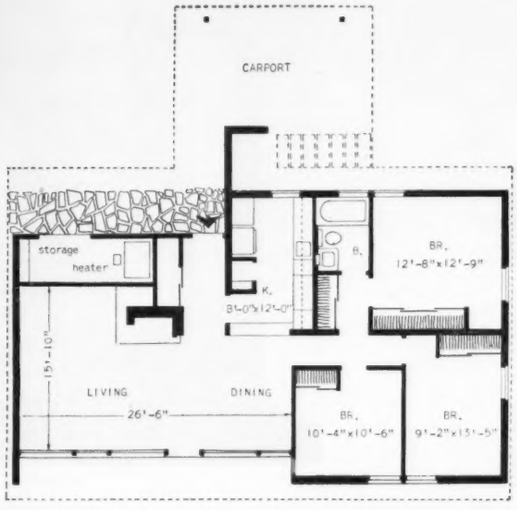


Flat-tops in an orchard

LOCATION: Branford, Conn.
PETER POWERS HALE, architect
THE BUILDERS GROUP, contractors
TECHNICAL PLANNING ASSOCIATES, land planning



Outside bulk storage and carport have been added to two-bedroom house. Concrete block dimensions were used as module by architect Hale.



Thick clay subsoil which lay just a few feet under surface made burying oil tank so expensive that it is now placed above grade in carport.

Most architects would prefer not to have to turn builder, salesman and land developer to promote a belief in modern design for houses, but Peter Powers Hale took that step. To prove his conviction that the public would like, and buy, good contemporary houses, he organized a building syndicate in New Haven, Conn.

On a small scale, he found out in just over one year that:

1. **Modern houses appeal to various kinds of people**
   (His buyers include Yale professors and machinists, a retired elderly school teacher and a young couple with four children.)
2. **Modern houses can be sold**
   (The first six are occupied or under construction; seven more are sold from plans.)
3. **Modern houses can be financed**
   (Though insurance companies ran from the houses as from a plague, a local savings and loan company likes the project and is now prepared to advance construction money to Hale's group for a program of five houses at a time.)

The way of the innovator is hard

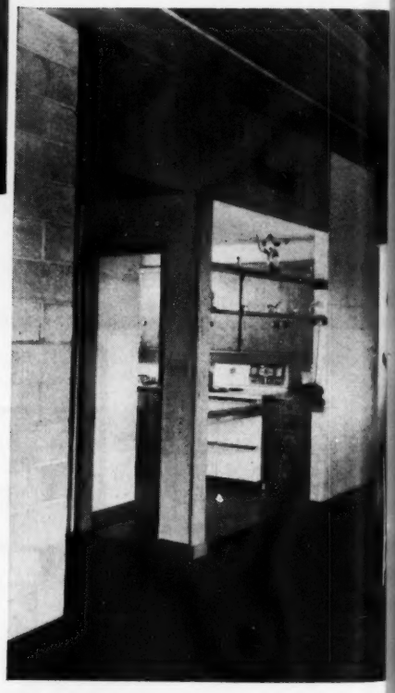
While Peter Hale is breathing easier today about his flat-topped houses in Orchard Hill, the past year was an uphill struggle. His partners in the Builders Group are his subcontractors, who had worked on his custom contemporary houses over the past few years and were familiar with his design demands. Their chief contribution has been their willingness to wait until "mortgage day" for their money, for no mortgage funds were available until the first houses were completed.

Instead of the flat, grid-patterned subdivision, Hale had Technical Planning Associates lay out a winding pattern through the former orchard that respected the contours of the hillside and saved every possible gnarled apple tree. The preserved trees both shield the large windows from the road and frame the view across the valley. Instead of the salt box or Cape Cod, Hale designed a flat-topped, window-walled cement block house on a concrete slab. An excellent way to win friends, but not to influence lenders.

Every source of mortgage money in New Haven was approached, but while the local correspondents for insurance funds were sometimes enthusiastic, the invariable answer from the "home office" was always "No." With the completion of the first three houses, a local bank agreed to take the mortgages for these, but wanted no more "until someone else takes some, too." What they wanted "someone else" to take was:

- A big (45′ x 28′) house on a big (100′ x 150′ minimum) lot.
- A well-designed open-plan house, with full-length windows in living and bedrooms, mahogany wall paneling, and rear carport.
- An inexpensive house, that offered 1,260 sq. ft. for less than $10 a sq. ft. ($11,900).
- A house whose design won a certificate of approval from the Southwest Research Institute.

In peak-roofed house, ceiling follows roof line right out to overhanging eaves, adding height and spacious feeling to living-dining area.



Opening in kitchen wall doubles as pass-through or snack bar. Overhead hot-air heat shown may be replaced by crawl space perimeter system.

Financing comes through

This spring, New Haven's First Federal Savings & Loan not only took the next three mortgages, but also agreed to advance construction money on five houses at a time, a quantity that would keep the small organization busy. The Builders' Group has deposits on seven more houses already, and has stopped taking orders until the next group is completed. These will be three-bedroom houses ($12,900) to accommodate customers who need more space. And so that the one design doesn't get monotonous, Hale is getting ready to introduce an alternate model.

Some obvious difficulties have cropped up: First, Hale is an *architect* and the demands of construction and sales are seriously interfering with his practice. Second, limited capital and a small profit margin have made subdivision capital improvements slow and piecemeal. Finally, the few-at-a-time system will not permit production-line methods that could cut costs drastically.

Good land use

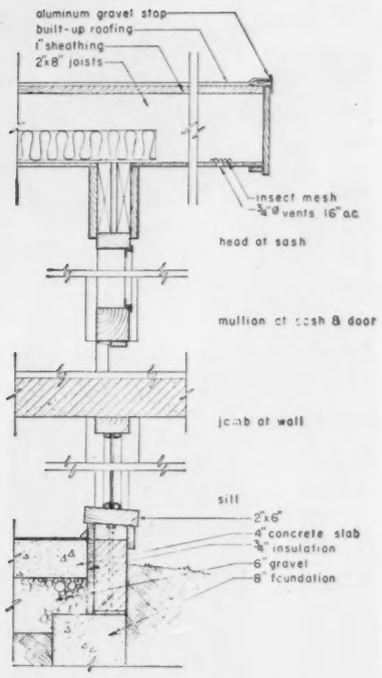
The apple orchard was replanned to permit the building of the maximum number of houses with the minimum amount of roads and improvements. Hale hopes to keep the entire development semirural in character. Starting about halfway up the slope, present plans call for proceeding along the crest of the rise. The low land at the foot of the hill will have to await municipal sewers before development.

Each house is oriented to the southeast, with a window wall that soaks up radiant sunheat in the winter to compensate for the large convective heat loss through the floor-to-ceiling glass.

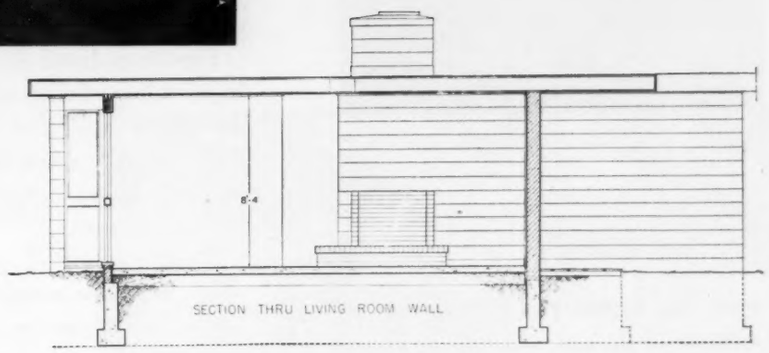
Corner fireplace ranked high in popularity with buyers. For family with small children, Hale extended window sills 4" into room to prevent accidental collisions with glass.

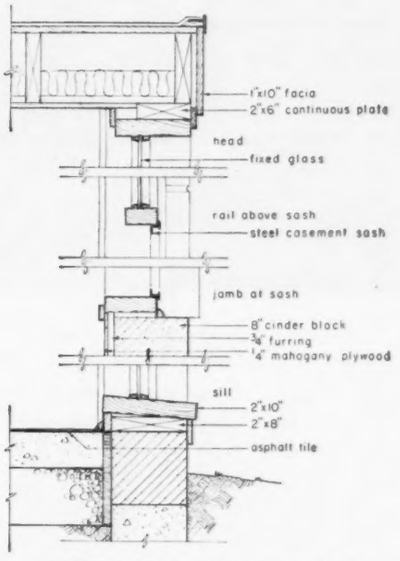
COST BREAKDOWN

Raw land	$200
Bonds	73
Survey	125
Utilities: water deposit	335
Roads, grading and landscaping	322
Septic tank and field	245
Asphalt tile and counter work	251
Carpenter labor and materials	2,721
Millwork	117
Electrical: labor and materials	345
Fixtures	91
Glass	232
Hardware	75
Heating	815
Masonry	2,300
Painting	365
Plumbing	1,180
Roofing	455
Sash	191
Office	25
Architectural fees and supervision	250
Financing (interest on notes)	16
Asphalt tile and counter work	251
	$10,980
Sales and profit	920
TOTAL sales price	$11,900



SECTION THRU LIVING ROOM GLASS WALL





SECTION THRU FULL-LENGTH WINDOWS

A new manual, "Small Pipe Warm Air Perimeter Heating" has just been issued by the National Warm Air Heating & Air Conditioning Association. It is based on extensive tests throughout the country over the past few years and marks the official acceptance of this new form of heating.

Just released is a significant manual on the newest trend in warm air heating. It heralds the rise in popularity of

Small pipe heating

In recent months the use of small pipe heating systems has spread like a grass fire.

First introduced in 1949 this new method offers obvious advantages in providing efficient warm air heating at lower cost. In the last six months the use of 3½" and 4" pipe systems has become so widespread that FHA and VA asked the warm air industry to standardize on a design and installation manual (just published, *see p. 124)* to serve as a guide to appraisers.

Manufacturers of small pipe systems are enthusiastic, expect small pipes to be the accepted standard within five years. They cite the following advantages to builders and architects:

- Less space is required. Small pipes fit inside a standard stud wall, wind around beams, leave plenty of headroom in basements.
- Design is simplified. Distribution systems can be laid out easier and faster. This lessens the chance of mistakes due to faulty calculations.
- Installation cost is lowered. Small prefabricated pipes can be made faster, require less metal. Builders report installation savings (labor and materials) up to 35% under comparable large duct systems.
- New registers combined with small pipes provide a highly efficient warm air blanket over windows and outside walls. Customer complaints due to poor heating are conspicuously less.
- Remodeling is made easy and inexpensive. Automatic heating with warm air can be installed in many old houses which have no space for large ducts.
- Summer air conditioning is easier to add to small pipe systems.

On the following pages is a detailed story on small pipe systems, together with reports from the first builders who have used them.

How do small pipe systems work?

Small pipe systems can be used in any type of house: slab, crawl space or basement. They work efficiently because engineers combine their use with three other important developments:

1. *Air is hotter.* One difference from a conventional warm air system: air is heated to a temperature of 175° to 195° rather than 150°. Since a smaller amount of air passes through the ducts, it must be hotter to do a proper heating job. Conventional furnaces are used to heat a smaller quantity of air to a higher temperature; there is no difference in size or cost of the furnace.

2. *Air circulation is more continuous.* Manufacturers have adopted the "continuous air circulation" principle which has been recommended for several years by research engineers for most warm air systems. The blower of the heating system is regulated so it will run most of the time in mild weather, practically all the time in cold weather. The average ¼ to ⅓ hp blower runs approximately 2,500 hrs. in winter compared to 2,000 hrs. previously. Extra cost to the homeowner is no more than 40¢ a month, about $3 for an entire winter.

3. *New registers are used.* They are designed to mix the hot incoming air immediately with room air, so people in a room will not notice the supply air is warmer. Photographs of the various kinds of registers (blender, wall, and floor types) are shown on these pages. The higher air velocities used in most small duct systems also provide a more complete blanket of warm air over windows and exterior walls.

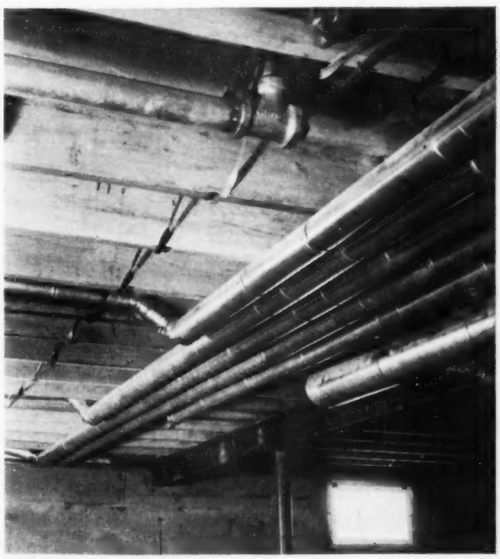
The success of the small pipe system depends both on the new registers and the continuous air circulation principle to overcome cold air rushing downward over big windows. In a sense cold drafts are stopped before they can form. (New type registers don't increase heating costs more than $15 in a 1,000 sq. ft house. New registers cost about $1.50 more than a conventional type.)

Higher velocities

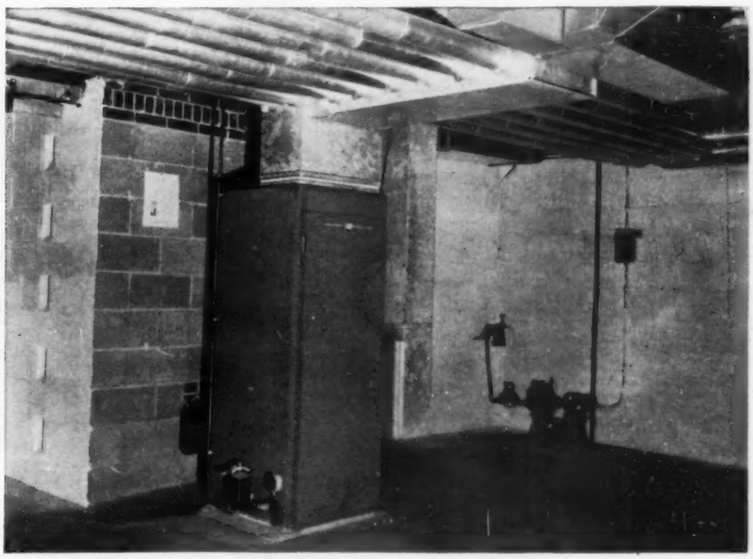
There is not complete agreement in the industry on air velocities for small pipe systems. The new small duct guide stresses the fact that all small duct systems need not use high velocity air flow. However, when conventional velocities are employed—600′ per minute—more small pipes are needed to circulate a given quantity of air.

Most manufacturers of small pipe systems use air velocities up to 1,100 fpm. Speeds of 1,100 fpm are not considered high, as air conditioning engineers regularly call for velocities up to 2,000 fpm in standard cooling systems in commercial installations. The high velocity conduit systems in office buildings use air that zooms through the ducts at around 4,500 fpm.

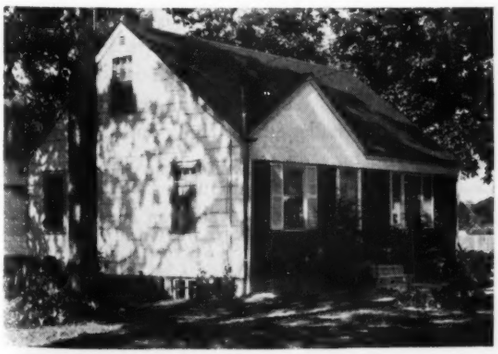
The patented "high velocity" systems currently available to builders require a stronger blower because air friction in small pipes is greater than the air friction in larger ducts. To overcome higher friction, engineers first standardized on prefabricated low resistance fittings. By eliminating sharp bends and turns they eliminated most of the source of high friction. In fact, some manufacturers found that the blowers in their conventional furnaces are strong enough to handle the increased friction of

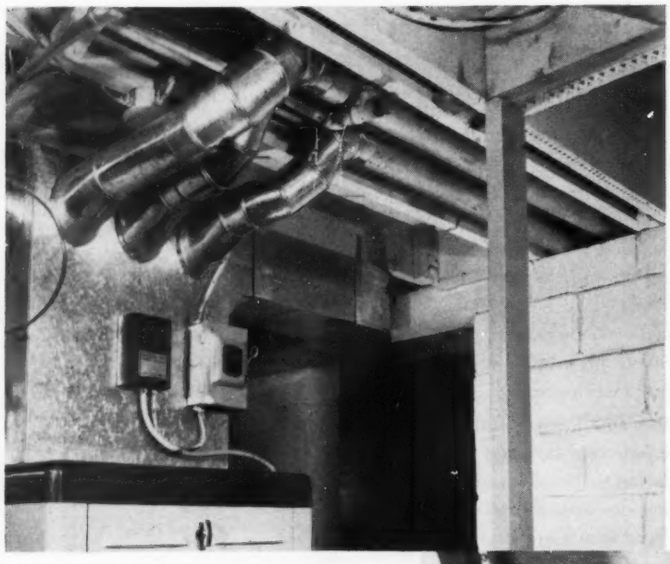


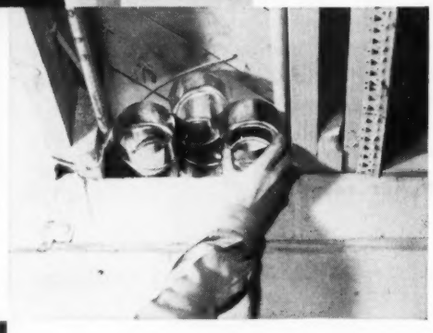
Small pipe heating in one of 39 houses (below) by Long Island builder Harvey Haines. Installed in 1949 this was one of first small pipe installations in the country. Individual pipes "peel-off" to under windows of all rooms.



More headroom in basements is big feature of small pipe installations. Pipes can be neatly furred-in under the ceiling when recreation rooms are planned. Return air is brought back from the house through conventional rectangular duct at right of unit.







Plenum over furnace above feeds warm air to small pipes through prefabricated low-resistance fittings. Pipes (right) easily fit between joists, take up little usable space in houses. After the heating system is properly designed small pipes can be installed by workman familiar with ordinary tools.

Flexible fittings wind around beams, cut down the time required for installation. Sharp turns are avoided; consequently air friction is lower.

Less cutting is required for the passage of small pipes through floors. Framing construction isn't materially weakened. Builders report large savings in time and labor required to cut holes.

Hal Pottorf

In remodeling, small pipes can be easily inserted between standard stud walls from attic (left) or basement. Pipe insulation is recommended when warm air pipes travel through cold attics.

small pipe systems. Other manufacturers have had to increase their blower sizes from 1/6 to ¼ hp or ¼ to ⅓ hp depending on the size of furnace and quantity of air heated. The increased electrical power necessary is no more than that required for a 75 w. bulb.

Simplified design

After an accurate heat loss is computed for a house there is far less chance for a builder or architect to go wrong on heating with small pipes, because ducts do not have to be sized individually for all rooms. The heating contractor is not confronted with the problem of figuring rectangular sizes.

The average length small pipe—up to 25′—handles 10,000 Btu's, enough capacity for 90% of all rooms. (Longer runs deliver proportionately fewer Btu's.) When a room needs more heat an additional pipe is run to it; more than two pipes are seldom needed.

For a house with 70,000 Btu per hour heat loss, seven or eight small ducts are needed depending on room sizes and length of runs. Consequently design is so greatly simplified it's practically foolproof. A New Jersey heating contractor who pioneered the new systems has already installed about 1,000 jobs *"with no complaints from owners!"*

Type of installation

Despite the advantage of running 3½″ pipes between wall studs most manufacturers choose to produce the 4″ size. They point out that 4″ is a standard prefabricated pipe which can be obtained anywhere in the country. They point out too, that a 4″ pipe can be easily "pinched" to permit installation in walls. Or builders are offered the alternative of using prefabricated 2″ x 10″ metal stacking between studs.

One type of system is the individual pipe method. Here a series of small pipes fans out from the furnace like spokes of a wheel *(see photo)*. This method is applicable in houses up to approximately 1,500 sq. ft.

In larger houses the individual pipe method may be inefficient or uneconomical (warm air blown through excessively long runs of small pipes tends to lose its heat and velocity). In larger houses the builder can run a conventional rectangular duct down the length of the basement (or attic). The long duct is like the trunk of a tree: small pipes branch off from it to all rooms. This method of installation is called an extended plenum *(see photo)*.

What builders report:

Says M. C. Bogue of Denver: This method of heating, ". . . eliminates cold draft areas, cold floors, and completely stops condensation on windows." His total heating bill for small pipe systems is $550 in a 1,000 sq. ft. crawl space house.

In a survey of the first builders who have used small pipe systems H&H found two-thirds paid less and none paid more than their former price for a *comparable high-efficiency* large duct system.

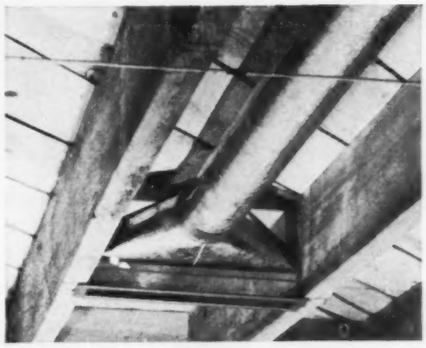
Savings result from quicker and easier installation; all parts are prefabricated and there is a minimum of site labor. Also less cutting is required to permit passage of small ducts through floors and walls. (There is no difference, however, in furnace cost.)

Savings over conventional systems vary because large duct prices are different throughout the country. Savings are less in cities such as Wichita where large duct costs are extremely low.

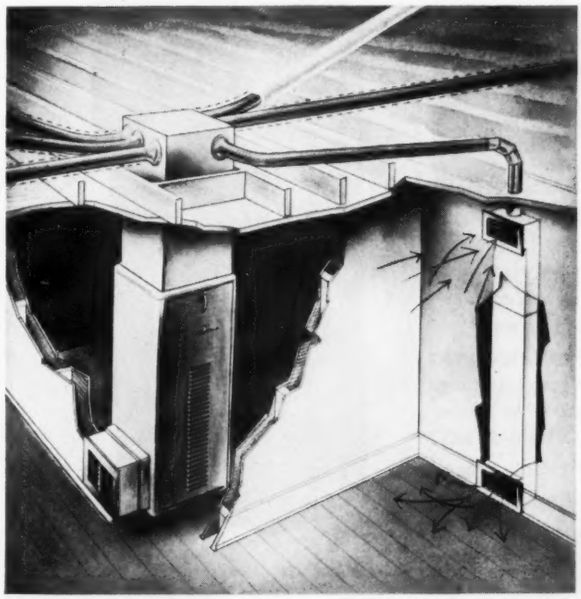
Note also that larger savings are possible when the furnace is centrally located to avoid long runs. Then a minimum of small pipes is required.

Here's a sampling of typical prices:

- Fresno, Calif.: Builder Bruce A. Younger pays $900 for 3½" pipe systems in 1,500 sq. ft. houses. His heating bill was formerly $1,300 for a standard forced air system.
- Rochester, N. Y.: Bernard Entress saves approximately 10% on heating in 935 sq. ft. houses. He formerly paid $625 to $775.
- Long Island, N. Y.: Builder Hillard Man put small pipes in his $8,750 houses for $575, no saving over a conventional job. Previously he had an inexpensive but poor system. Now, for the same price he gets much better heating.
- Denver, Colo.: Heating contractor B. K. Sweeney says he saves five different builders about 10% of their total heating bills with small pipes.
- Pompton Lakes, N. J.: Janel Builders, Inc. pay $675 for 4" systems in $11,000 houses. They formerly paid $775 for the heating systems in similar houses.

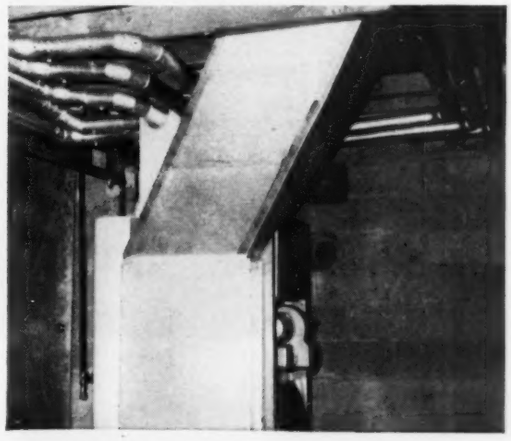


Standard fittings spread air evenly to new 2" x 14" registers. Here warm air is supplied to a basement. Fitting and register are turned upward to discharge air to floor above.

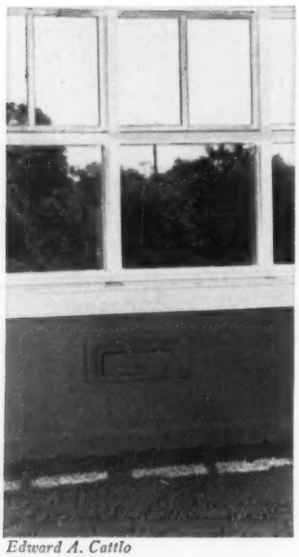


Blender type registers provide high efficiency air circulation in rooms. Warm air shooting into top of blender (above right) pulls in equal quantity of room air, by induction, through top register. The blended air is discharged through the lower register. Return air is pulled back to the furnace through a single grille (lower right).

Builder Wallace Shilay first installed small pipe heating in his house (above). Now he puts small pipe systems in the rest of his new development in New Jersey. Shown below is a photograph of a typical installation in Shilay's new houses.

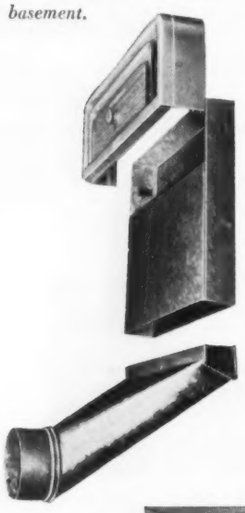


AIR CONDITIONING with small pipes



Edward A. Cattlo

Air leaving this special wall register immediately mixes with room air. The blended air is discharged vertically over the window. Prefabricated fittings, below, connect the register to small pipes in the basement.



Year round air conditioning with small pipes is not just a theory—it's here.

Test installations with 3½" pipes for residential heating and cooling were first tried out last summer in Texas and California; warm or cool air is supplied by the same distribution system. One manufacturer claims that small pipe systems circulate cool air better than conditioners with conventional ducts.

The new small duct manual* is confined strictly to heating. So far there is no official guide on residential air conditioning with small pipes. However, several manufacturers are currently pioneering such cooling systems.

Economy in adding cooling to existing heating systems is claimed because any added ductwork required would cost less.

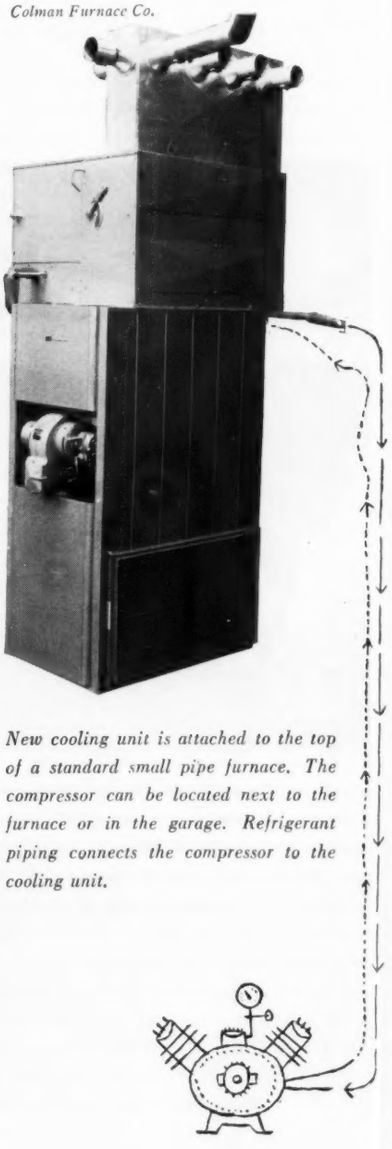
Recently announced is the first air conditioned project in the country to use small pipes—a 65 house development by New Jersey builder James D'Agostino; houses sell for $22,000 to $28,000 depending on the floor plan.

D'Agostino's 1,600 sq. ft. houses include separate heating and cooling units. Eleven 4" pipes feed warm or cool air to all rooms from an extended plenum which runs the length of the basement. Total cost of D'Agostino's year round system is $1,900 (a cooling tower isn't used). Heating alone with 4" pipes would cost $825 in the same houses.

This 1,600 sq. ft. house is typical of 65 houses in the first development in the country with small pipes for year-round air conditioning. Built by New Jersey builder James D'Agostino they sell for $22,000 to $28,000 depending on floor plan. Extended plenum (below) from separate G.E. heating and cooling units runs length of basement. Small pipes branch off from it to all rooms. Rectangular duct (bottom right) is for return air.

* The new small pipe manual can be obtained from the National Warm Air Heating & Air Conditioning Association, 145 Public Square, Cleveland 14, Ohio. The price is 75¢.

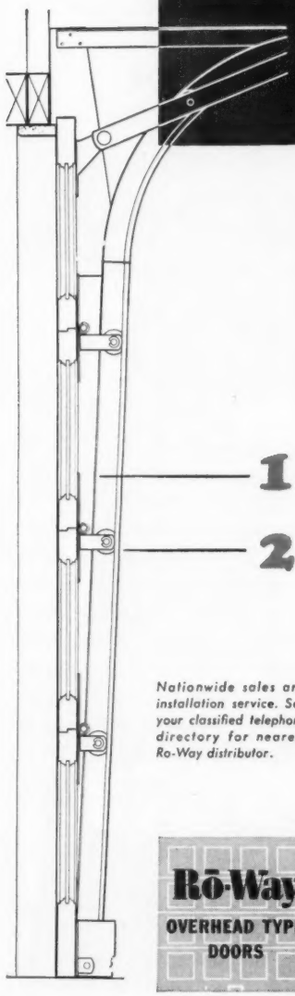
Colman Furnace Co.



New cooling unit is attached to the top of a standard small pipe furnace. The compressor can be located next to the furnace or in the garage. Refrigerant piping connects the compressor to the cooling unit.

again

Rō-Way pioneers garage door improvements



with two Outstanding new features

Just as America's leading makers of cars, trucks and buses are constantly pioneering automotive improvements, so Ro-Way continues to pioneer door improvements for the garages that house these vehicles. That's why you can always depend on Ro-Way Overhead Type Doors to embody the most advanced design and engineering features.

As an example, take Ro-Way's two newest developments—

1 **TAPER-TITE CLOSURE—Vertical tracks taper away from jambs at a pitch of ¼" per door section. In "down" position, door is snug-tight against the weather.**

2 **SEAL-A-MATIC HINGES—an exclusive design of graduated height—guide the closing door tightly against side and head jambs. On opening, the hinges instantly free the door from jambs to provide easy, frictionless operation.**

Pace-setting features like these—plus Power-Metered springs, Double-Thick Tread rollers, and other outstanding Ro-Way developments—make Ro-Way first choice in overhead type garage doors.

Specify Ro-Way for *your* residential, commercial and industrial jobs—and be *sure* of the most advanced garage door engineering.

Nationwide sales and installation service. See your classified telephone directory for nearest Ro-Way distributor.

ROWE MANUFACTURING CO., 906 Holton St., Galesburg, Ill.

Rō-Way
OVERHEAD TYPE DOORS

SEE OUR CATALOG IN SWEET'S

there's a Ro-Way for every Doorway!

DELCO-HEAT

has the quality features that attract home buyers!

E. S. Gordy, President, and R. E. Gordy, Secretary of Gordy and Son, Inc., Wilmington Manor, Delaware, installed 400 Delco-Heat units in their Wilmington Manor Gardens development. A typical Gordy home is shown above.

Delco-Heat increases the sales appeal of your homes at no extra cost!

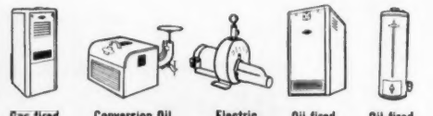
The heating plant in a new home can help clinch the sale—especially if it's Delco-Heat. For most prospective buyers know that a product bearing the names Delco-Heat and General Motors is just about the finest of its kind.

There are many other reasons why more and more builders are turning to Delco-Heat these days. In the complete Delco-Heat line they find the right heating equipment for any size home, for oil or gas-fired installations. And the low competitive prices stay well within carefully planned cost budgets. Why not get all the facts about Delco-Heat before you start your next project?

For a good deal
DEAL WITH DELCO

Delco-Heat "OPC" Conditionairs—oil-fired forced warm air furnaces for utility room, alcove, closet or basement installation, including two reverse flow models. Capacity 75,000 BTU per hour output. Other Conditionair models to 200,000 BTU output, also available.

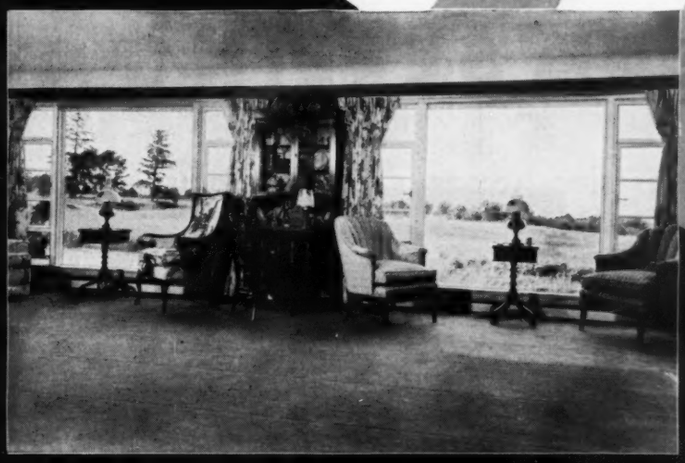
GENERAL MOTORS
DELCO-HEAT



Gas-fired Conditionairs | Conversion Oil and Gas Burners | Electric Water Systems | Oil-fired Boilers | Oil-fired Water Heaters

For complete specifications and details on Delco-Heat heating equipment, write Dept. MB, Delco Appliance Div., General Motors Corp., Rochester 1, N. Y.

BEE GEE windows



...modern wood windows

There's a famous BEE GEE Window to meet every need, satisfy every fancy, fit every budget—of every customer for every type of home. Beauty, design, style, practicability, price—BEE GEE Modern Wood Windows have them all—in over 42 different styles and sizes.

Famous BEE GEE features: Clean the OUTSIDE from the INSIDE—the BEE GEE Modern Wood Window is a complete unit consisting of frame, pre-fit glazed sash with glass bedded in putty—Copper screen and all hardware installed at the factory. A complete unit ready to set in the wall.

New, extra-added feature:—New automatic modern storm windows.

BROWN-GRAVES CO.
Akron I, Ohio

See your lumber dealer or write today for the complete, beautifully illustrated BEE GEE Window Catalog.

BROWN-GRAVES CO., Dept. HH-102
Akron I, Ohio

NAME _____

ADDRESS _____

CITY _____ STATE _____

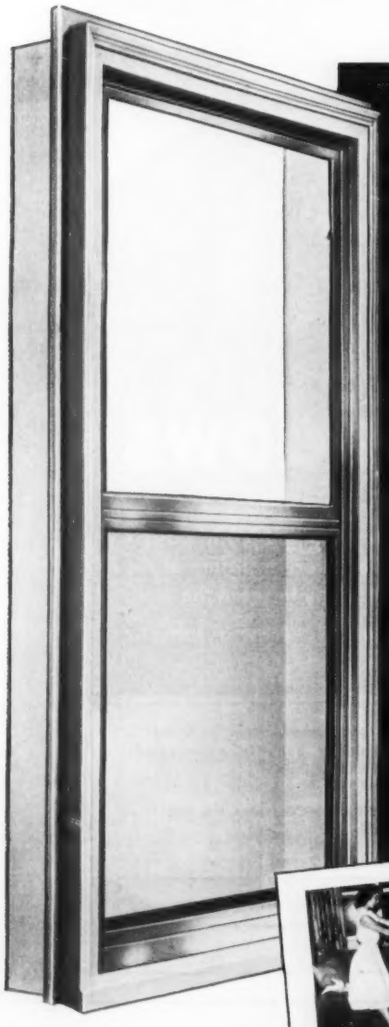
BALTIMORE, MARYLAND. Rusco Prime Windows specified on all 87 units of Gebhart Housing Project.

SANTA ANA, CALIFORNIA. Rusco used on all Barkley Square and Sunshine Homes by builder Burt Huff.

CLEVELAND, OHIO. Shaker Towers, deluxe apartment building, features Rusco Prime Windows with insulating sash.

From Coast to Coast the reports roll in:

"REAL SELLING FEATURES"



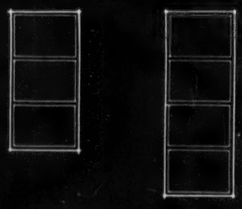
RUSCO

FULLY PRE-ASSEMBLED

HOT-DIPPED GALVANIZED **Prime Window**

(VERTICAL SLIDE)

COMES FACTORY-PAINTED, HARDWARE ATTACHED —ALL READY TO PLACE IN WINDOW OPENING!



Also available in 3-light and 4-light styles for commercial and industrial construction.

GLASS • SCREEN

BUILT-IN WEATHERSTRIPPING

INSULATING SASH*

WOOD OR METAL CASING

—OR STEEL FINS

All in One unit!

*Optional

Glass and Screen Inserts Easily Removed From Inside For Convenience in Cleaning. The Rusco removable sash feature has tremendous appeal as a convenience and safety feature.

PORT WASHINGTON, WISCONSIN. P & H prefabricated homes are now built with Rusco Prime Windows.

HOUSTON, TEXAS. All 84 units in McGregor Terrace Addition are built with Rusco.

EVERETT, MASSACHUSETTS. State-aided Housing Project consisting of multiple-dwelling units.

"OFFERS MORE VALUE"

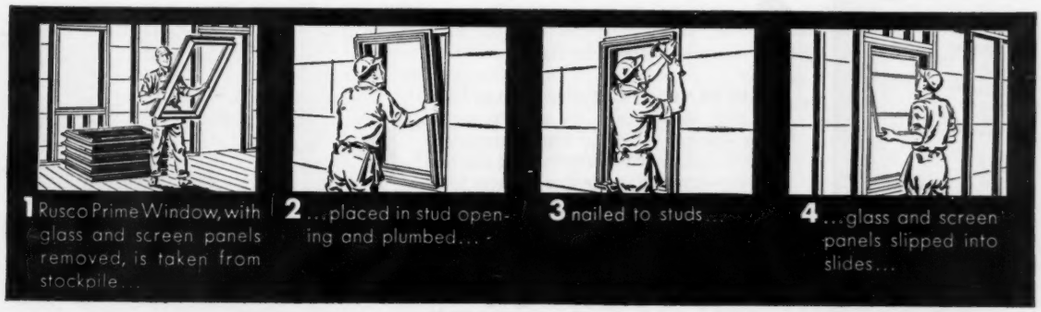
"CHEAPER TO INSTALL"

GIVES YOU MORE VALUE—MORE SELLING FEATURES—The Rusco Prime Window provides the most *complete* window protection money can buy. There's nothing else like it on the market. Precision-built of finest hot-dipped galvanized steel, bonderized and finished with baked-on outdoor enamel.

And *plus* selling features galore! Year' round rain-proof, draft-free ventilation. Most efficient insulation against heat and cold. Smooth, effortless operation. No screen or storm window problem. Big savings in fuel consumption—and many more.

SAVES YOU CONSTRUCTION TIME AND MONEY—This unique, ready-to-install window makes truly remarkable savings in installation time and costs. It can be fully installed on many types of construction in *as little as five minutes*. No glazing, no fitting of hardware, no field painting, no call-backs for adjustments and re-fitting. This all means *speedy* construction and *profitable* construction. Many builders report that the installed cost of the Rusco Prime Window is even less than that of the *cheapest* wood window they can buy!

FULLY INSTALLED on many types of construction IN AS LITTLE AS 5 MINUTES!



1 Rusco Prime Window, with glass and screen panels removed, is taken from stockpile...

2 ...placed in stud opening and plumbed...

3 nailed to studs...

4 ...glass and screen panels slipped into slides...

5 ...and in less than 5 minutes the fully-installed window is ready for service!

For illustrated literature and specifications, write or wire

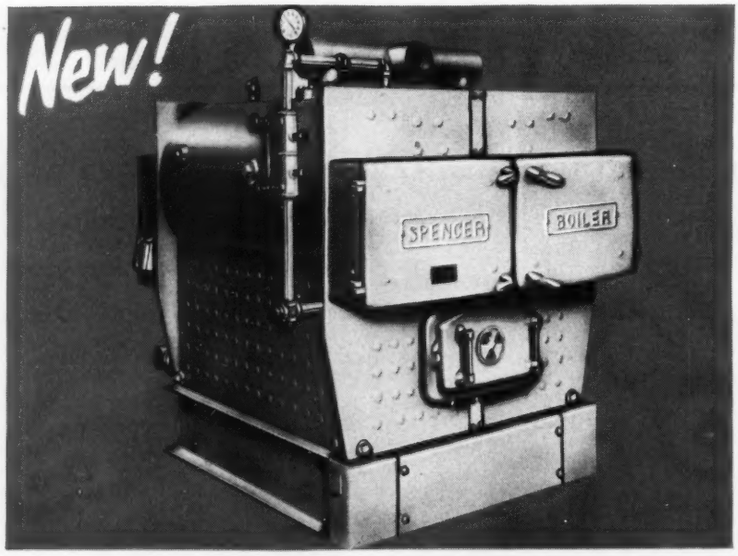
THE F. C. RUSSELL COMPANY

DEPT. MB-72, CLEVELAND 1, OHIO • IN CANADA: TORONTO 13, ONTARIO

Let SPENCER Solve Your Heating Problems

with a wide selection of boilers in more than 70 adaptable models and sizes. There's a Spencer for every building... for every fuel!

IN THE COMMERCIAL FIELD, Spencer offers an ingenious new design like this—



SPENCER'S

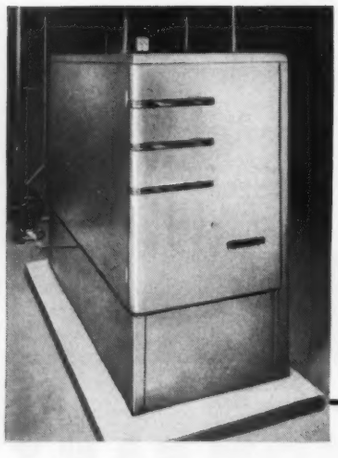
NEW DIVIDED LOW-WATERLINE BOILER

Flattened out to beat low headroom problem!

Divided for easier entrance through basement openings. Yet two watertight sections need no welding for installation!

This and other Spencer commercial boilers range in size from 3,500 to 42,500 square feet, steam.

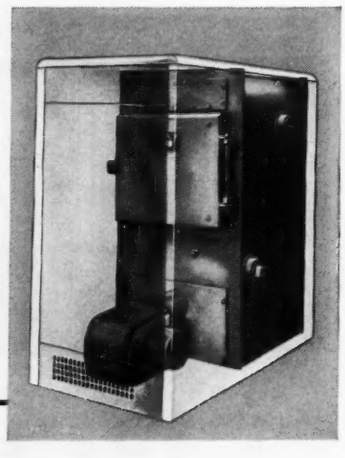
IN THE RESIDENTIAL FIELD, Spencer offers versatile lines like these—



SPENCER'S "C" SERIES—Modern steel heating boiler—smartly styled jacket, standard or extended—9 sizes ranging from 570 to 3000 sq. ft., steam—three-pass type boiler—heavy-duty doors—water-cooled frames.

SPENCER "R" SERIES—Steel heating boiler—6 sizes ranging from 320 to 1100 sq. ft., steam—peaked firebox for more efficient combustion—staggered boiler tubes for quick heat transfer—comes in standard or extended beauty jacket.

SPENCER HEATER
LYCOMING-SPENCER DIVISION
WILLIAMSPORT PENNSYLVANIA



Our houses are selling fast, Bill, and I think Kentile throughout is one reason why.
I think so, too. I've learned it pays to use quality products that customers recognize, yet are priced where they can afford them.

The outstanding durability of colorful Kentile is well known to both builders and buyers... makes homes look better... last longer... sell faster

Kentile helps sell small homes faster

Prospective buyers see and are sold by the beauty of Kentile Floors . . . know all about the extra years of service . . . the easy-cleaning advantages. Builders know that Kentile lowers construction costs . . . raises quality. And, both buyers and builders know that the nationally-advertised name is a plus selling point for resale as well as original purchase.

Kentile goes down speedily, economically . . . over any smooth, firm, interior surface . . . even below grade over concrete in direct contact with the earth. Once down, Kentile's wide range of modern colors are part of the floor for its long life . . . they can't wear off because they go clear through to the back of each tile.

Find out how Kentile's many advantages can be brought to work for you . . . whether in new construction or remodeling. Contact the local Kentile Flooring Contractor or any of the conveniently located offices listed below.

KENTILE®

The Asphalt Tile of Enduring Beauty

KENTILE • SPECIAL *(Greaseproof)* KENTILE • KENRUBBER • KENCORK

KENTILE, INC., 58 Second Avenue, Brooklyn 15, New York • 350 Fifth Avenue, New York 1, N. Y. • 705 Architects Building, 17th and Sansom Streets, Philadelphia 3, Pennsylvania • 1211 NBC Building, Cleveland 14, Ohio • 900 Peachtree Street N.E., Atlanta 5, Georgia 2020 Walnut Street, Kansas City 8, Missouri • 4532 South Kolin Avenue, Chicago 32, Illinois • 1113 Vine Street, Houston 1, Texas • 4501 Santa Fe Avenue, Los Angeles 58, California • 95 Market Street, Oakland 4, California • 452 Statler Building, Boston 16, Massachusetts

Says Washington, D. C. builder of 1000 homes...

"Prospects are enthusiastic about

...and this packaged payment plan!"

Mr. Joel T. Broyhill, general manager and partner of M. T. Broyhill & Sons, says:

"Four out of five prospects for our homes in the $10,000-to-$13,950 class want General Electric Kitchens. The big hurdle that first comes to their minds, however, is how they can pay for these wonderful electric servants.

"*The answer is the Packaged Mortgage under which these fine G-E appliances are included as a part of the long-term mortgage,* making the cost to the homeowner less than five dollars extra each month toward mortgage payments."

Here you see Mr. Broyhill calling on Mrs. Alfred C. Malboeuf of Arlington, Va. The Malboeufs have lived in this home for two years now, and Mr. Broyhill is "calling back" to get Mrs. Malboeuf's firsthand reactions to her all-electric G-E Kitchen.

"How do I like my G-E Disposall,® Mr. Broyhill? Why, I'm so used to turning on the water to flush food scraps away, I just don't know what I'd do without it. We never think about garbage pails any more!

"As a builder, one thing I've always liked about G-E kitchen equipment is that all the appliances are *matched,"* says Mr. Broyhill.

"Yes, it's so nice to have all my appliances of the same height and same shade of whiteness," replied Mrs. Malboeuf. "By the *way,* I just love my G-E Range. It heats up *so* quickly!

"Look, Mr. Broyhill, our food packages and plates just don't get all jammed in. It's very convenient to *see* what you want as soon as you open the door! This G-E Refrigerator certainly makes ice cubes *very fast* too!

our G-E Kitchens

"I'll confess now that the G-E Dishwasher was one of the things that sold me on the house, but we couldn't have afforded one if it had not been included in our regular monthly payments. It's one of those items that we would have had to wait for! By the way, just look how clean and sparkling this glass is!"

"You've certainly designed a most efficient kitchen, Mr. Broyhill—and topped it off with these wonderful G-E Cabinets. The doors swing open and close so easily, and are easy to keep clean."

"Thank you, Mrs. Malboeuf. As you know, we've put a lot of thought and care into planning and building houses like yours."

For your houses:

Luxury appearance and convenience without the luxury price tag!

M. T. Broyhill & Sons have erected and sold about 1,000 houses in the $10,000-to-$13,950 price class within the last few years. They are one of the most successful builders and developers on the East Coast.

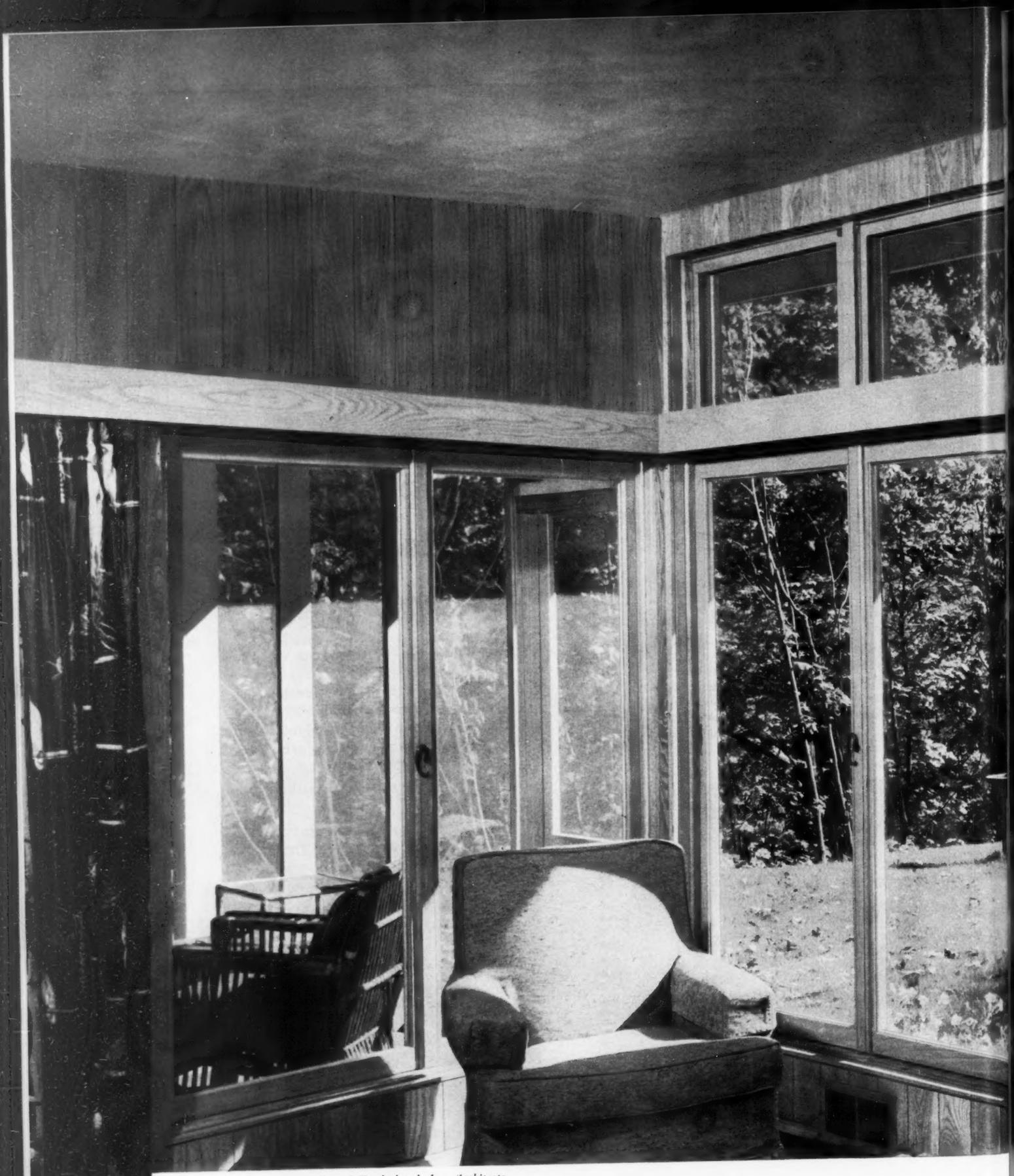
Why not take a page from their success story?

Equip *your* houses with General Electric Kitchens and offer them under the Packaged Mortgage Plan. Your houses will sell much faster.

Today, even families with incomes of $50 a week are enjoying the comfort of G-E Kitchens!

See your local G-E distributor, or write to the Home Bureau, General Electric Company, Louisville 2, Kentucky.

GENERAL ELECTRIC



Humphrey & Hardenbergh, Inc., Architects

BRIGHTEN THAT IMPORTANT CORNER with . . .

ANDERSEN *Windowalls*®

PATTERN OF SUNSHINE on the floor . . . pattern of nature's beauty framed on the walls . . . these are but two of the important rewards planned for the home owner when the architect specified this corner WINDOWALL of Andersen Gliding Windows. There are others—picture window effect, but with windows that glide easily open. Plenty of fresh air, when desired, but a weathertight wall against cold or storms. Effective both as windows and as walls — these are Andersen WINDOWALLS. *TRADEMARK OF ANDERSEN CORPORATION

Andersen Corporation • BAYPORT, MINNESOTA

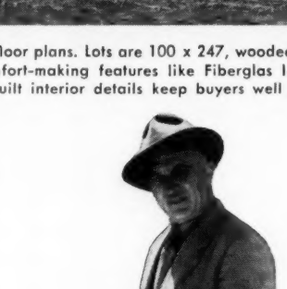
FAMOUS FOR COMPLETE **WOOD** WINDOW UNITS

Write for Detail Catalog or Tracing File of Installation Details or see Sweet's files for specification data. WINDOWALLS *sold by millwork dealers.*

Norwood Estates in Northfield Center, Ohio, a suburb of Cleveland, is an outstanding example of a residential development in tune with the times. Buyers of the middle priced 3 and 4 bedroom homes are offered a choice of 12 different exteriors, 4 different floor plans. Lots are 100 x 247, wooded and situated around two small lakes. Comfort-making features like Fiberglas Insulation and careful attention to custom-built interior details keep buyers well pleased.

"What buying slump?"

. . . SALES COME EASY WHEN YOU BUILD THE SALES TALK INTO THE HOUSE!



"Regulation X? Hasn't hurt us a bit," says Frank J. Kares, builder of Norwood Estates. "Prospects are quick to recognize our values, for regardless of the price bracket, we build *quality* homes. Fiberglas* Insulation is specified on all our jobs as a matter of routine. Our studies show it to be the finest available and it's the *one* insulation known to practically everyone. We'd be foolish if we didn't push it as a selling feature."

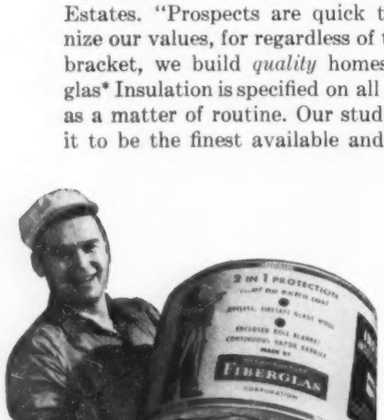
An idea for you? Good times or bad, it's the house with features that sells. And you get a host of them when you use Fiberglas Insulation. It's fire-safe, provides no food for vermin, has a self-contained, FHA approved vapor barrier. And because Fiberglas Insulation is standard for leading ranges and refrigerators made today, prospects know it's extra efficient.

Mr. Kares and his son, Frank, Jr., use Fiberglas Roll Blankets in sidewalls and ceilings, also use Fiberglas Perimeter Insulation to stop heat losses from edge of the concrete floor slab of basementless homes.

Build this sales plus into your homes, too! Specify Fiberglas Insulation on your next project. Builders the country over agree it's *the one insulation that helps sell the house.* Buy it from the dealers of these five industry leaders:

ARMSTRONG CORK CO. Lancaster, Pa. · CERTAIN-TEED PRODUCTS CORP. Ardmore, Pa. · THE FLINTKOTE COMPANY New York, N.Y. · INSULITE MINNESOTA AND ONTARIO PAPER CO. Minneapolis 2, Minn. · TIGER KELLEY ISLAND LIME & TRANSPORT CO. Cleveland, Ohio

Owens-Corning Fiberglas Corporation, Dept. 67-G, Toledo 1, Ohio. *Improving building everywhere by co-sponsoring the Housing Research Foundation of the Southwest Research Institute.*



OWENS-CORNING
FIBERGLAS

is in your life..for good!

*Fiberglas is the trade-mark (Reg. U.S. Pat. Off.) of Owens-Corning Fiberglas Corporation for a variety of products made of or with fibers of glass.

You'll sell your homes faster with this "back-door" approach!

Instead of showing prospects through the front door into a bare room . . . why not have them taken straight into the Crosley Kitchen . . . in through the *back* door!

Mrs. Prospect will be more than half-sold from the moment she steps into your modern, Crosley-equipped kitchen. She'll love everything about it . . . the way all the Crosley Kitchen units fit together so beautifully . . . the more than adequate Crosley Cabinet space . . . the efficient, reliable Crosley Appliances!

ATTENTION ARCHITECTS!

When you are drawing up plans, specify and recommend Crosley products. Your clients will be *more* than satisfied.

Mr. Prospect will be pleased to learn that this marvelous Crosley Kitchen may be included as part of a package mortgage.

And you'll appreciate the fact that any of the many Crosley Kitchen units may be combined to fit perfectly into *your* home or apartment plans.

INSTALL THESE FINE CROSLEY PRODUCTS

WALL CABINETS · RANGE PANTRIES · REFRIGERATOR PANTRIES
UTILITY CABINETS · BASE CABINETS · ELECTRIC RANGES
SHELVADOR® FREEZERS · SHELVADOR® REFRIGERATORS
SINKS AND FOOD WASTE DISPOSERS

Free Booklet available to architects and builders. For information or booklet write: Builder Sales, Crosley Division, Avco Manufacturing Corporation, 1329 Arlington Street, Cincinnati 25, Ohio.

CROSLEY

DIVISION AVCO MANUFACTURING CORPORATION

1329 ARLINGTON STREET, CINCINNATI 25, OHIO

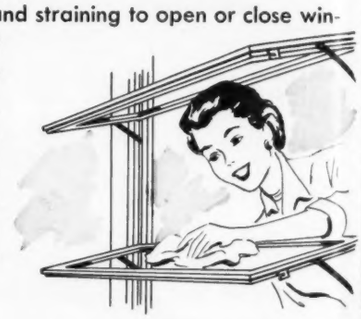
BETTER PRODUCTS FOR HAPPIER LIVING

Watch women respond to Auto-Lok AUTOMATIC LOCKING PATENTED WINDOWS

Why? It is so *plainly* evident! Auto-Lok is the new, modern miracle window . . . the window that "makes its own weather". It's the window selected by leading architects for their prize-winning homes. No wonder it's the window that actually *sells* homes to women!

Gone are the days of struggling and straining to open or close windows . . . hanging halfway out of windows, or lifting them bodily out of their frames to clean the glass.

Auto-Lok Windows open or close with finger-tip ease of operation . . . so simple a child can manage them. And, Auto-Lok Windows are the quickest and easiest windows in the world to clean!



CLEAN THE OUTSIDE FROM THE INSIDE . . . TOP VENT TOO!

The amazing truth is . . . it's the window women want most!

It's the first window that combines the best features of all window types . . . the first and only window that actually gives women everything they've always wanted in a window . . . with none of the disadvantages they've put up with in the past.

The precision balanced, friction-free operating mechanism of Auto-Lok Windows not only provides unequaled operational ease, it is responsible for Auto-Lok's amazingly tight closure . . . TEN TIMES TIGHTER than the generally accepted standard.

FRESH AIR WHILE IT'S RAINING . . .

No more running to close windows . . . rain can't enter through Auto-Lok's scientifically designed slanting sash.

WARMER IN WINTER . . .

Auto-Lok Windows are the *tightest closing windows ever made* by actual laboratory tests. Heat stays in . . . cold stays out . . . cutting fuel costs!

COOLER IN SUMMER . . .

Auto-Lok Windows open widest . . . almost 90.° The slanting sash help to scoop in even the slightest breeze . . . always inward and upward thus eliminating drafts.

IT'S THE WINDOW THAT MAKES ITS OWN WEATHER!

ONLY Auto-lok GIVES YOU ALL THESE OUTSTANDING FEATURES

EASIEST TO CLEAN . . .
Nothing to lift out . . . no sash to remove . . . no gadgets to disengage. Simply open wide and clean all glass from the inside . . . top sash, too!

FRESH AIR NITE-VENT . . .
Bottom sash opens slightly for night ventilation, while upper sash remain securely locked . . . fresh air circulation during bad weather, too!

PRACTICAL BEAUTY . . .
Narrow horizontal lines and graceful tilt of sash in every open position add distinction to any home . . . lend themselves to a wider variety of architectural arrangements.

FINGER-TIP CONTROL . . .
for a lifetime. Perfectly balanced, friction-free mechanism operates window at the touch of a finger. No adjustments every necessary . . . never sticks, never rattles!

INTERCHANGEABLE SCREENS AND STORM SASH
Can be handled all from the inside. Just flip the clips . . . no tools required. Reduce a day's work to an hour!

CONCEALED HARDWARE
No unsafe, unsightly mechanism exposed to collect dust. Compact roto-type operator handle does not interfere with drapes, blinds, etc.

Tightest Closing Windows Ever Made
...SEALS SHUT LIKE YOUR REFRIGERATOR

Auto-lok
AUTOMATIC LOCKING
PATENTED

WINDOWS
Aluminum or Wood

Windo Tite JALOUSIES AND LUDMAN JALOUSIE DOORS

Porches . . . breezeways . . . carports can be turned into attractive, year-around liveable rooms with beautiful WindoTite Jalousies. Ludman Jalousie Doors bring light to dark toyers and halls. Write for complete information.

MAIL THIS COUPON NOW!

LUDMAN Corporation
Box 4541, Dept. MB-7, Miami, Florida

Gentlemen: Please send me, without obligation, the booklet, "What Is Important In A Window" . . . and complete information regarding the Ludman Products checked here:

☐ Auto-Lok Aluminum Windows
☐ Auto-Lok Wood Windows
☐ WindoTite Jalousies
☐ Ludman Jalousie Doors

I am a . . . Architect ☐ Builder ☐ Dealer ☐
☐ Other_____

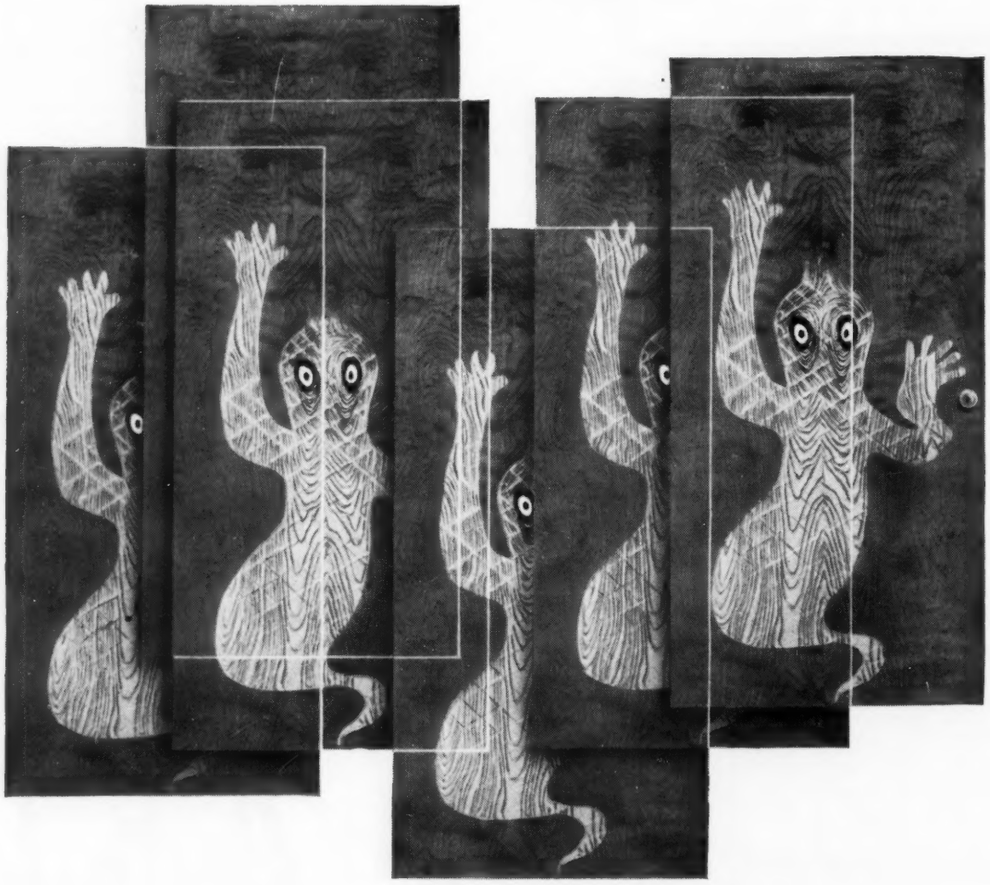
Name_____

Address_____

City_____ State_____

LUDMAN LEADS THE WORLD IN WINDOW ENGINEERING

DON'T BUILD HAUNTED HOUSES



NO CORE PATTERN GHOSTS WITH Roddiscraft HOUSEMART 7-PLY CONSTRUCTION

GHOSTS usually don't show up until the finish is applied and the door hung. Customer complaints and call-backs are mighty costly then. Insure against core-pattern ghosts with Roddiscraft Housemart Doors.

Roddiscraft 7-ply construction is one reason why architects prefer Roddiscraft doors 2 to 1. Priced for the residential market.

NATIONWIDE Roddiscraft WAREHOUSE SERVICE

Cambridge 39, Mass. .....229 Vassar St.
Charlotte 6, N. C. .....123 E. 27th St.
Chicago 32, Ill. .....3865 W. 41st St.
Cincinnati 2, Ohio .....836 Depot St.
Dallas 10, Texas .....2800 Medill St.
Detroit 14, Mich. ....11844 E. Jefferson St.
Houston 10, Texas .....2403 Sabine St.
Kansas City 3, Kan. ....35 Southwest Blvd.
Los Angeles 58, Calif., 2620 E. Vernon Ave.
Louisville 10, Ky. .....1201-5 S. 15th St.
Marshfield, Wis. .....115 S. Palmetto St.
Miami 38, Fla. .....255-315 N.E. 73rd St.
Milwaukee 8, Wis. ....4601 W. State St.
New Hyde Park, L. I., N. Y. .....
Plaza Ave. & S. 18th St.
New York 55, N. Y. .....920 E. 149th St.
Port Newark 5, N. J. .....103 Marsh St.
Philadelphia 34, Pa., Richmond & Tioga St.
St. Louis 16, Mo.....3344 Morganford Road
San Antonio 6, Texas ..727 N. Cherry St.
San Francisco 24, Cal., 345 Williams Ave.

Roddiscraft

RODDIS PLYWOOD CORPORATION
Marshfield, Wisconsin

15 minutes to more STORAGE SPACE

with STEELCRAFT *Spacemaker*

STEEL SLIDING CLOSET DOORS

Steelcraft Spacemaker Sliding Doors can be installed in just 15 minutes . . . and the only tool needed is a screw driver. It's a fact . . . you not only save time and money on installation, but add more usable space inside and outside the closet and add space to the room ordinarily taken up by old-fashioned swinging doors . . . and makes every inch of closet space easily accessible.

Steelcraft Spacemaker steel sliding closet doors are packed in individual cartons with all necessary hardware and instructions for installing. They can be purchased with steel casing if desired. The Steelcraft steel casing is shipped as a complete one-piece welded assembly.

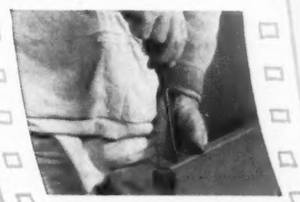
Steelcraft Spacemaker Steel Sliding Closet Doors have these advantages —

- **TROUBLE-FREE operation assured.**
- **WON'T STICK, warp or sag.**
- **EASY to install.**
- **SILENT—Glide on noise-free rollers.**
- **BONDERIZED, Painted and Baked—will not peel or chip—satin-smooth surface takes any desired finish or color.**

1. Steelcraft sliding doors are packed in carton complete with all necessary hardware and simple instructions.

2. Check casing for plumb, level and true, then attach guide channel to head.

3. Next attach guide to the floor. No drilling is necessary.

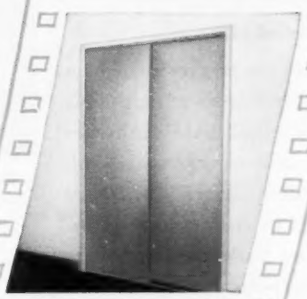


4. Attach door guides to top of each door.

5. Fasten door rollers to bottom of each door.

6. Set doors in place by inserting top in guide channel. Place rollers in floor guides.

7. Make final adjustment on guides so they move smoothly and easily.



8. Finished closet door assembly, ready for painting to match any color scheme.

STEEL Craft
REG. U.S. PAT. OFF.

STEELCRAFT
MANUFACTURING COMPANY
ROSSMOYNE, OHIO (IN GREATER CINCINNATI)

MAIL THIS COUPON TODAY!

The Steelcraft Manufacturing Co., Dept. MB-752
9017 Blue Ash Rd., Rossmoyne, Ohio

Please send me full information on Steelcraft SPACEMAKER Sliding Steel Doors.

Name .....

Company ..... Title .....

Business Address .....

City ..... Zone ..... State .....

GLIDE-ALL *Sliding Doors*

SOLVE THESE PROBLEMS . . .

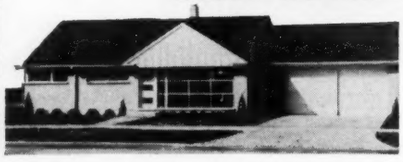
CLOSETS

WARDROBES

STORAGE SPACE

in large apartment buildings

and small homes



516-unit luxury apartment building at 4950 Marine Drive, Chicago—designed by architects Dubin & Dubin, costing nearly $5,000,000.

Modern ranch-type home built in Westchester, Ill., by Robert Bartlett Realty Co., financed by Talman, Chicago.

5 GOOD REASONS WHY!

1 **Beautiful, Modern**

2 **Smooth, Dependable Operation**

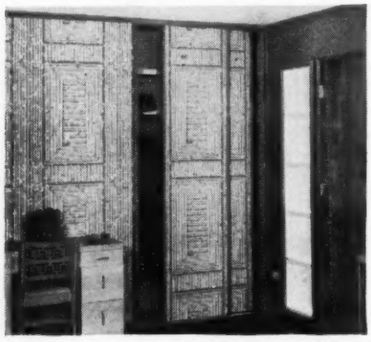
3 **Floor-to-Ceiling or Standard Heights**

4 **Low Initial Cost**

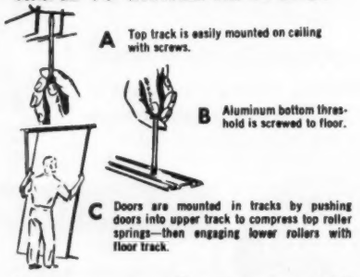
5 **Low Installation Cost**

● Hundreds of the largest apartment buildings and hundreds of thousands of small, medium and luxurious homes enjoy extra usable storage space with Glide-All Sliding Doors . . . and at actual savings in construction costs. Architects and builders everywhere recognize Glide-All as the ideal, all-purpose sliding door because it has the combination of beauty, durability, versatility and economy to meet all building requirements.

It will pay you to get the facts and specifications on this modern solution to your storage problems. Write for informative illustrated bulletins today!



SIMPLE TO INSTALL AS A B C!



A Top track is easily mounted on ceiling with screws.

B Aluminum bottom threshold is screwed to floor.

C Doors are mounted in tracks by pushing doors into upper track to compress top roller springs—then engaging lower rollers with floor track.

have you seen LAMIDALL®?

It's the new genuine plastic laminate for walls and top surfaces—low in cost—easy to install—easy to maintain. *Write for Literature.*

glide-all sliding doors are a product of

WOODALL INDUSTRIES INC.

DETROIT 34, MICHIGAN

and are manufactured in the following Plants: CHICAGO, 3510 Oakton St., Skokie, Ill.
LAUREL, Miss., P.O. Box 673 — NEW York, Glen Cove Rd., Mineola, N.Y.
SAN FRANCISCO, 1970 Carroll Ave.—Address requests to plant nearest you.

REVIEWS

CIAM. A Decade of New Architecture. Edited by S. Giedion. Editions Girsberger Zurich. 232 pp. Illus.

The CIAM is a remarkable organization, a serious world-wide society with little more organization than a floating card game. The initials stand for *Les Congrès Internationaux d'Architecture Moderne,* a title adapted at the first meeting in Switzerland back in 1928. Who meets? . . . In this new book which grew out of the 1947 convention in Bridgwater, England, Secretary S. Giedion speaks of the famous members of the CIAM mildly as "an association of friends." The friends include J. L. Sert (who is president), Serge Chermayeff, Richard Neutra, Le Corbusier, Alfred Roth, Alvar Aalto, Oscar Niemeyer, Mies van der Rohe, Vilhelm Lauritzen, Walter Gropius, Ernesto Rogers, Marcel Breuer, H. E. Mindlin, Werner Moser, C. van Eesteren, and many others. The aim of CIAM, as rephrased at this postwar meeting, is "to work for the creation of a physical environment that will satisfy man's emotional needs and stimulate his spiritual growth." An earlier phrased aim (1928): "to watch over the contemporary development of architecture."

This handsome book issued under the CIAM seal is a partial report of the 1947 meeting in Bridgwater, England, and a record of what some of these friends were designing between 1937 and 1947, when there could be no global conventions. This 1947 meeting is described by member Mark Hartland Thomas (England):

"The reunion at Bridgwater was a very moving experience. . . . Those who were meeting again after ten years of separation and vicissitude—several had endured the worst of the Nazi concentration camps—were frankly overjoyed to see old faces again. . . .

"This emotional harmony was no surprise to those who were not new to a CIAM Congress. What did surprise was to discover, as the reports unfolded from groups all over the world, and the work of the special commissions got under way, that the development of ideas in the several groups had been proceeding on parallel lines in spite of the scanty contacts. It had been feared otherwise."

The record of what the CIAM members were designing during the ten-year hiatus is contained in the second part of the book—in 183 pages of photographs of buildings, furniture, and projects. It shows that Mr. Thomas was right—the members were thinking, and designing, along the same lines.

It is unfortunate that all this had to wait five years to find a patron and be printed. This, however, is a book which most architects will enjoy having anyway, because of its deft consolidation of so much good material, like Neutra's desert house for Kaufmann, Erik Bryggman's mortuary chapel at Abo in Finland, several good 1939 World's Fair build-

(Continued on page 146)

Why buy unknown equipment ?

... when everyone is sold on Rheem

It pays to put well-known equipment in the houses you are building. It makes them just that much easier to sell.

For example, most people know about Rheem products. They read about them in their favorite magazines. They know they are quality products, built to provide long, dependable service. When they see Rheem products in your houses they are impressed favorably.

Furthermore, Rheem offers you the widest available selection of water heaters, furnaces and water softeners—all reasonably priced. Equip your homes with these plus values. Call your Rheem Contractors. Let them prove why Rheem is the *best buy for builders.*

© 1952 RHEEM MFG. CO.

RHEEM MANUFACTURING COMPANY

GENERAL SALES OFFICES, 570 LEXINGTON AVENUE, NEW YORK, N. Y.

AUTOMATIC STORAGE WATER HEATERS • WARM-AIR FURNACES • WATER SOFTENERS

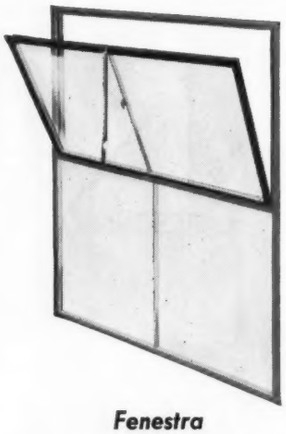
Now! *Fenestra* Basement and Utility Windows are AVAILABLE GALVANIZED

EXTRA PROTECTION for the tough use these windows get

Fenestra
BASEMENT WINDOW

Basement windows take a beating constantly. Rain and dirt splash against them. Rot and rust take their toll, often because basement windows are in places that are hard to reach for painting.

Fenestra's* new galvanizing takes this all in stride. In fact, maintenance-painting isn't even necessary. The heavy galvanizing coat, applied by the Hot-Dip process, completely protects the window. And remember, they're made *strong*—of Fenestra rolled steel casement sections.



Fenestra
UTILITY WINDOW

Here's added durability—in a galvanizing coat that protects the window from conditions which cause rot and rust. In farm service buildings, such as dairy barns where uric acid prevails—in garages, laundries and other buildings where moisture is high—these windows can stand the gaff!

Rugged construction with rolled steel casement sections—Super Galvanizing by Fenestra's own Hot-Dip process. Here's a combination that can't be beat.

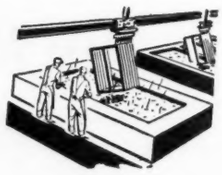
Fenestra Basement and Utility Windows are proved performers in thousands of houses. See your Fenestra representative, or mail the coupon.

*®

Fenestra Galvanized BASEMENT AND UTILITY WINDOWS

WHY *Fenestra* GALVANIZING GIVES YOUR HOUSES MORE SALES APPEAL

It looks better—right from the start. It overcomes the biggest hazards of basement and utility windows—rot and rust. It helps give houses the "premium" appeal—the something extra—that people want today.



WHY *Fenestra* GALVANIZING IS DIFFERENT—AND BETTER

Fenestra has the only plant in America especially designed to galvanize steel windows. Fenestra's Super Hot-Dip Galvanizing is done with special tanks, special automatic controls, where everything is geared to give you the most permanent windows made.

It's not "dip and guess"—this galvanizing is *engineered* to make windows that *last!*

FREE BOOK ON GALVANIZING

tells how Fenestra Super Hot-Dip Galvanizing makes Fenestra Windows stay new. Mail the coupon.

Detroit Steel Products Company
Dept. MB-7, 3401 East Grand Blvd.
Detroit 11, Michigan

Please send me:

☐ Book on Fenestra Galvanizing

☐ Full information on Fenestra Basement and Utility Windows.

Name_____

Address_____

City_____ State_____

MATICO's new

MULTI-PURPOSE FLOORING

simplifies planning . . . cuts building and remodeling costs

LOW-COST, STANDARD-GAUGE

ARISTOFLEX

VINYL-ASBESTOS TILE FLOORING

- Resistance to acid, grease, and alkali make it ideal for such installations as laboratories, cafeterias, hospitals.
- Durability is outstanding. It's vinyl-asbestos through and through—no felt backing.
- Sparkling colors and easy-to-clean surface make it perfect for all installations.
- Recommended for installation ON, ABOVE, or BELOW GRADE.
- May be laid direct on concrete, terrazzo or ceramic.
- Can be installed on wood over 15-lb. saturated felt . . . over gypsum, plank or unfinished concrete slab with suitable underlayment . . . and over magnesite, above grade.
- LOW COST is comparable to grease-proof asphalt tile.

Now the problem of selecting the right flooring is simplified. New MATICO ARISTOFLEX does the jobs of many floorings . . . its modern, vinyl-asbestos qualities meet the requirements of practically all installations.

And the low price of standard-gauge ARISTOFLEX—comparable to that of grease-proof asphalt tile—meets thrifty budgets. Installation is easy and economical. No special cements are required, ordinary asphalt tile adhesive does the job. ARISTOFLEX lays in tightly, immediately, due to square corners and clean edges . . . cuts clean without use of a torch.

ARISTOFLEX is vinyl-asbestos from top to bottom—no felt backing. It resists household acids, alkalis, petroleum solvents, oils, greases, turpentine, and fire . . . is tough and flexible . . . and has excellent indentation recovery. Vivid colors and marbleization go clear through each tile. As a result, ARISTOFLEX is one of the most durable of floorings. It wears for years and years . . . and steadfastly maintains its sparkling beauty. The smooth surface sheds dirt . . . wipes clean with a damp mop. Maintenance costs are low. Available in 9" x 9" standard gauge and 1/8" tiles.

For vinyl-asbestos flooring quality with economy, look to ARISTOFLEX.

MASTIC TILE CORPORATION OF AMERICA

Member: Asphalt Tile Institute

Joliet, Ill. • Long Beach, Calif. • Newburgh, N. Y.

QUALITY CONTROLLED

MA·TI·CO®

TILE FLOORING

MASTIC TILE CORPORATION OF AMERICA
Dept. 147, NEWBURGH, N. Y.

Send specification data and complete details about low-cost MATICO ARISTOFLEX vinyl-asbestos tile flooring.

NAME_____

FIRM_____

STREET_____

CITY_____ ZONE____ STATE_____

Kitchen-equip with WASTE KING Pulverator and show customers the advantage in buying your homes!

WASTE KING Pulverator is the most modern VISIBLE FEATURE you can put into your homes — the lowest budget, highest quality feature that upgrades the home, bringing top dollar prices!

SUPERIOR WASTE KING FEATURES!

"HUSH-CUSHIONS"— give 50% quieter, smoother operation. WASTE KING is the only really quiet garbage disposer.

LIFETIME GRIND CONTROL— controls the size of waste particles and length of fibrous materials for long life of the WASTE KING. Prevents jamming, clogging!

UNBEATABLE SERVICE RECORD— less than 1% service callbacks. Relieves builder of complaints. Customer satisfaction assured!

SELL THE VISIBLE FEATURE —

Waste King KITCHEN PULVERATOR CONTINUOUS-FEED

Buy from your Plumbing Contractor now!

A Product by GIVEN Mfg. Co. Dept. MB. 7, Los Angeles 58, Calif. Largest independent producer of garbage disposers in America!

REVIEWS

ings, Mies van de Rohe's IIT designs, and Costa, Niemeyer, Reidy, Leao, Moreira and Vasconcelos' Ministry of Education in Rio. Since most of the material is already familiar, its impact has been succeeded by other work, but US Architects will be interested in the preponderance of US homes in that section of this book, and also by the entire absence of US factories from among the industrial buildings.

The rephrasing

But the most interesting pages of this book are those in which a new concern was indicated by the CIAM. This is a concern for the universality of modern architecture, which may have become too submerged in its own attributes, too impersonal.

In the past, and in the present too, most modern architects have assumed that the presence of smoothness and body in their brew guaranteed the flavor. But perhaps it does not, except to the connoisseur or to the brewer. J. M. Richards of the *Architectural Review* in England asked the convention:

"Need the architect concern himself with the reactions of the man in the street? As long as he has faith in his own integrity as an artist, should he not follow his own inspiration, without worrying about popular appreciation? That is one question modern architects must answer; in particular whether modern architecture has a duty to provide the means of self-expression to the man in the street. . . ."

The answer of the convention was yes, and Secretary Giedion nailed this golden doubloon to the mast of CIAM for the new voyage: "CIAM is concerned with those problems that are just emerging over the horizon. In 1928 it was the industrialization of building materials; then standardization; then the development of contemporary town planning. Now we consciously promote another step. A step toward a rather intangible subject; esthetic problems or, you may prefer to say, emotional expression."

Now this sea of esthetics is a dangerous one for any voyager, and it was particularly courageous of CIAM to set sail as an organization. For in the past CIAM has spent most of its attention on the gigantic yet more harmonious problems of technology and planning, leaving esthetics to the individual members. (An example of CIAM achievement in the more general fields was J. L. Sert's important book, *Can Our Cities Survive?* which was formed largely during the fifth CIAM congress in Paris in 1937.)

And then there is the matter of the International Style, a term which has dogged the CIAM friends, but which they like as little as would any other artist who is categorized before he has completed his work. Most people looking at this book will think of this term, and many will find that the similarity of the

(Continued on page 150)

Some of the cracks shown in the picture at right are 2 inches wide! Above, they've disappeared, covered by a coating based on VINYLITE Brand Resins.

Data and photo on Dennis Chemical Co. and R. M. Hollingshead Corp. coatings, courtesy Surface Engineering Co., Wichita, Kansas.

Spray on Beauty-Shut out Weather

Here's a coating that covers surfaces with a tight, smooth elastic skin—bridges over cracks and scars—shuts out weather, moisture and fungus!

It's a coating based on VINYLITE Brand Resins—like those used to cover naval equipment after the war. Properly formulated, sprayed on fiber board, metal, concrete, or stucco, it stretches with structural movement, expands and contracts with temperature change. It's resistant to industrial fumes, oils, salts, and alkalies—stands up under abrasion and weather.

With a wide variety of colors, it makes a decorative, long-wearing vapor-sealing finish for interiors and exteriors alike. It increases thermal insulation and sound absorbing properties. Conventional spraying equipment readily applies it.

Whether you're tackling a giant structure or a bedroom—a hospital, school, bakery, or public building—protect it, make it look better, keep it on the job longer. Specify this coating based on VINYLITE Brand Resins. Correctly applied to new buildings or old, its tough, impervious skin will hold maintenance costs down, for it has the unique properties of VINYLITE Brand Resins that are so useful to scores of products in defense and basic industry. For more information and a list of suppliers, write Dept. NO-14.

Vinylite BRAND RESINS

TRADE MARK

BAKELITE COMPANY

A Division of

Union Carbide and Carbon Corporation

30 East 42nd St., New York 17, N.Y.

DON'T LET "RUST-MEASLES" RUIN THE BEAUTY OF YOUR HOME

NEVER-STAIN ALUMINUM NAILS will NOT rust, streak or stain. They offer low cost insurance against premature repainting or redecorating—thereby saving you from $300 to $500. Ordinary nails will cause unsightly rust stains and streaks to mar the beauty of your home. Expensive repainting is often necessary much sooner than expected.

Protect the homes you design and build—specify and insist on

NEVER-STAIN ALUMINUM NAILS

COST FOR THE AVERAGE HOME LESS THAN $4.00

NEVER RUST-STREAK OR STAIN PAINTED SIDING—SAVE COSTLY PREMATURE REPAINTING

NO COUNTERSINKING OR PUTTYING A $40 to $60 SAVING

POSITIVE PROTECTION FOR WOOD & INSULATED SIDING CEDAR & ASBESTOS SHINGLES

NEVER-STAIN TRADE MARK **ALUMINUM NAILS**

MEET FHA REQUIREMENTS

Ever Get a NAIL by MAIL?

Send today for FREE SAMPLES

NICHOLS WIRE & ALUMINUM CO.
Dept. HH-2, Davenport, Iowa

YES! I'm interested in Never-Stain Aluminum Nails. Send me free samples. I am:

Please Check ☐ Prospective Home Owner ☐ Now Own My Home ☐ Builder ☐ Carpenter ☐ Architect

Name _____

Address _____

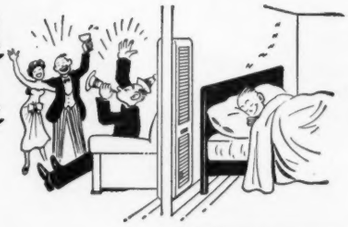
City _____ State _____

Another thing to remember....

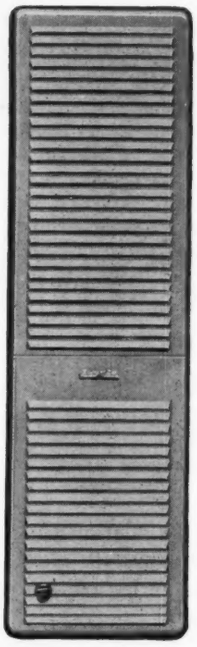
GOOD HEATING REQUIRES INDIVIDUAL ROOM CONTROL

THAT'S what BRILLIANT FIRE offers, the real Dual-Room Wall Heater. Single installation, 1 gas line, 1 flue . . . yet serves 2 adjacent rooms, each with separate heat control. No mere 2-way heater, this . . . actually 2 heaters in 1 super-insulated wall-box. Has 2 burners, 2 pilots, 2 heating sections, etc. Is A.G.A. Approved . . . engineered for All Gases . . . approved for High Altitude operation. Richly finished in baked Opalescent Beige enamel.

Vision-Proofed Sound-Proofed



EASY to install, regulate, operate. Wall panel in 2 sections, (1) lower Service Panel snaps on, facilitates lighting, (2) upper Large Panel releases by removing 2 screws.



NOTE FEATURES

- **Built to anchor into standard walls easily. Adjusts to fit exact wall thickness (lath-plaster, wall-board, etc.) without special labor, extra parts.**
- **Has more protective shielding for safety. Better insulated to avoid overheated walls, prevent marring wall finish.**
- **Completely gas-tight from burner to flue (100% welded). No odor, no sweating.**
- **High-efficiency combustion. Non-clog burner. Cast-iron head prevents combustion chamber burnout, insures long life.**
- **Low-level heat delivery assures living Zone comfort without stuffiness.**
- **Convenient controls, adjustments. Draft Diverter is built-in. Auto-controls optional, easily attached.**

WRITE FOR NEW CATALOG

Brilliant Fire

Vented—Recessed

WALL HEATER

THE OHIO FOUNDRY & MFG. CO., STEUBENVILLE, OHIO

3 Reasons why...

Architects Specify
Builders Certify
Electricians Recommend

Blo-Fan and Pry-Lites

No kitchen is complete or modern without a Blo-Fan electric exhaust ventilator. Its patented blade combines the volume of a breeze fan with the power of a blower. Its attractive grille is removable *without tools* and the motor assembly merely lifts out for easy cleaning. A Pry-Lite modern recessed lighting fixture completes the picture.

Easy to clean or relamp, Pry-Lites have snap-on fronts. No screws, no hinges, no nuts—and no tools needed. Pry-Lites (1000 series) have a built-in pull box, adjustable mounting straps that eliminate framing-in time, a plaster flange which fits any finish, and they are U.L. approved for any standard building wire.

In the bath . . . Pry-Lites and Blo-Fan go together—Pry-Lite recessed lights give perfect illumination without glare—and elimination of offensive odors and steam-streaked walls is assured with a Blo-Fan exhaust ventilator.

9 SPEED SWITCH

This exclusive Blo-Fan feature makes it as easy to regulate the rate of ventilation as it is to control the speed of a car. Standard equipment on De Luxe Model 210 Blo-Fan only.

Blo-Fan
America's Most Imitated Home Ventilator

Pry-Lites
The Original Recessed Lights with Snap-on Fronts

*Trade Mark Reg.

PRYNE AND COMPANY, Box A-72, Pomona, Calif.
Eastern Factory: 124 Adams St., Newark, New Jersey
Warehouses: Los Angeles, San Francisco, Chicago, Atlanta

Stocked by more than 650 wholesalers in over 350 cities.

Type 115-80 80,000 Btu input. Trim, compact, design engineered

- **Compact** — only 21″ wide x 22″ deep x 69½″ high.
- **AGA-Approved** for operation with natural, mixed, manufactured, or propane gas, and for high altitude without derating on city gases.
- **All-welded heat exchanger**—heavy gauge steel. Designed to eliminate expansion and contraction noises. Easily cleaned.
- **Quiet blower** — large 11″ size. Motor cushioned on rubber. Factory assembled.
- **Pre-wired** — upper limit control, motor and lower fan and limit switch are factory wired and tested.
- **Low-cost installation** — shipped assembled.

IT'S tailored for today's homes — and today's budgets. It has all the well-known Mueller *quality* — plus plenty of capacity for the compact modern homes being built this year.

This Type 115-80 is made to order for perimeter heating, in slab or crawl-space houses or for any installation where it is desirable to bring the warm air through the bottom or lower part of the furnace casing. A real space-saver, it's designed to "fit" in closets or utility rooms.

Get the whole story on the 115-80; ask your Mueller Climatrol heating contractor for complete information. Or, write for "Facts and Figures." *L. J. Mueller Furnace Co., 2020T W. Oklahoma Avenue, Milwaukee 15, Wisconsin*

95th Anniversary

Mueller Climatrol

B-63

FOR GAS FOR OIL FOR COAL

REVIEWS

ten years of work by CIAM members in different countries is not an occasion for joy; the collection is somewhat flat as a cultural document.

This probably has a great deal to do with the new direction CIAM is taking, squarely toward the esthetic problem. The CIAM architects must be aware they will probably cease to function with such pleasant agreement, because their new study should generate many arguments. But they will be very good arguments, and add again to the worth of this dedicated band.

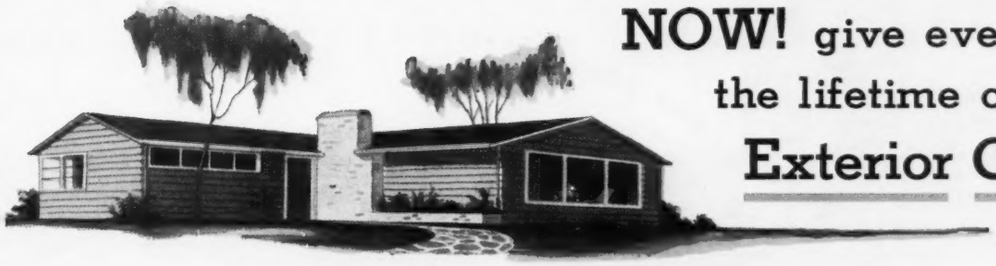
HOUSING RESEARCH. Plumbing Fixture Arrangement. 18 pp. 15¢. Roof Gutters. 12 pp. 10¢. House and Site United. 28 pp. 15¢. Each 8½″ x 11″. Housing & Home Finance Agency. For Sale by Superintendent of Documents, US Government Printing Office, Washington 25, D.C.

The HHFA has done it again. These three "Construction Aids" are the most recent first-rate publications to come from the Agency's energetic Division of Housing Research. And although conservation of materials and manpower is the proclaimed *raison d'être* for the booklets, attractive residential design seems to be an inevitable consequence of such sensible planning.

The first of the new series is a guide to simplified design of plumbing fixture arrangement. Demonstrating how to cut installation costs, it presents to the house designer the planning ideas that are inherent in economical and effective plumbing systems (and, incidentally, conform with most codes and standards). Grouping and orientation of the fixtures, and the importance of room arrangements are analyzed in relation to function and to location of service lines. The book estimates that a carefully planned one-bathroom house should average about 40′ less piping than an illogical layout. In weight, the difference amounts to about 84 lbs. of cast iron, 51 lbs. of lead, 48 lbs. of steel, and 5½ lbs. of copper. In hard money, the saving is between $40 and $50 per house.

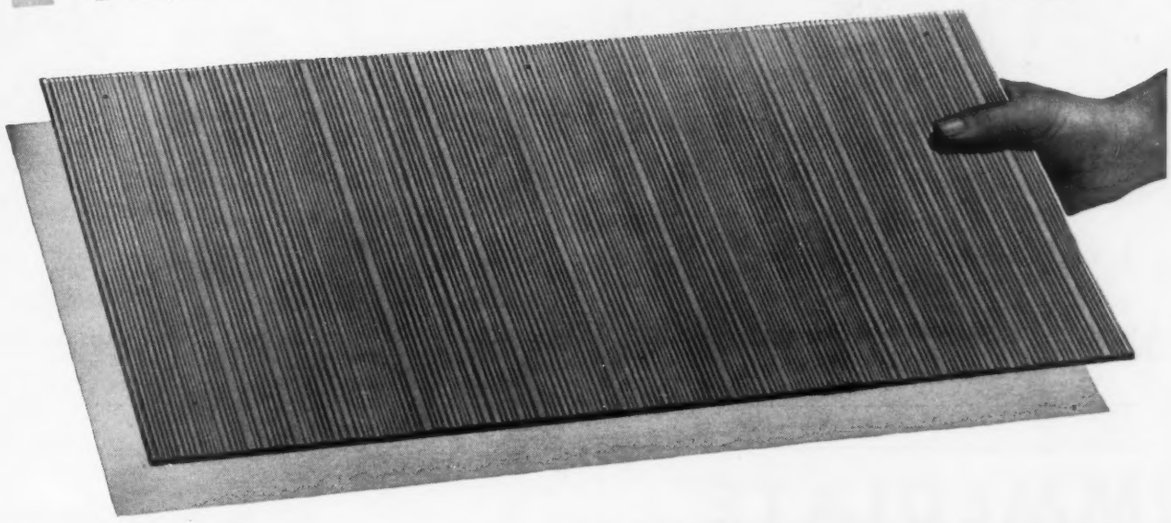
Roof Gutters, Construction Aid 2, describes and illustrates the use of alternate materials for critical metals in gutters and downspouts. On the basis of a study of the more common roof designs, it points out that for a house 26′ x 32′, the conventional rafter roof requires 64′ of gutter; the hip roof 116′; the shed roof 32′; and the butterfly roof, no gutter.

"There are several major ways to waste money and materials in house construction. . . ." begins the third book, *House and Site United*. ". . . One sure way is for a builder to pay little or no attention to the site. . . ." Primarily concerned with the single house on a single lot, the general planning principles discussed are also applicable to subdivisions. Throughout the publications, fastidiously clear drawings and typography are in keeping with the clean thinking behind the text.



NOW! give every home the lifetime charm of Exterior Color

NEW —and styled for tomorrow



- **New deep-grain texture!**
- **New color harmony!**
- **Same lifetime durability!**
- **Same low price!**

CHROMA-TEX SIDING SHINGLES have a deep, natural-looking texture. Color is two-toned—dark in the valleys, light on the ridges—for a pleasing *new* kind of decorating effect that lends itself perfectly to modern color-planning ideas for exteriors. Like all Asbestone products, *Chroma-Tex* Siding Shingles are rock-like in their ruggedness—fireproof, weatherproof, rot-proof, termiteproof. Made of asbestos-cement, they need no painting, no preservative treatment, no maintenance of any kind.

- **Put more color, more style, more APPEAL into every home you design.**
- **Give your clients the rich, textured effect of the costliest sidings on the market—for the same price as regular asbestos shingles.**
- **Use any of 5 appealing CHROMA-TEX colors to style every exterior with true "decorator harmony" from the ground up.**

ASBESTONE

Chroma-Tex

SIDING SHINGLES

COLORS: Twilight Gray • Poplar Green • Pheasant Brown
Dusty Coral • Mellow Ivory

ASBESTONE CORPORATION
5387 Tchoupitoulas St., New Orleans 15, La.

Please send me samples and full information on NEW CHROMA-TEX Siding Shingles.

NAME _____

FIRM NAME _____

STREET & NO. _____

CITY _____ ZONE _____ STATE _____

ASBESTONE—Rugged as the rock it's made from

Roofing & Siding Shingles **Wallboard** **Corrugated Roofing & Siding**

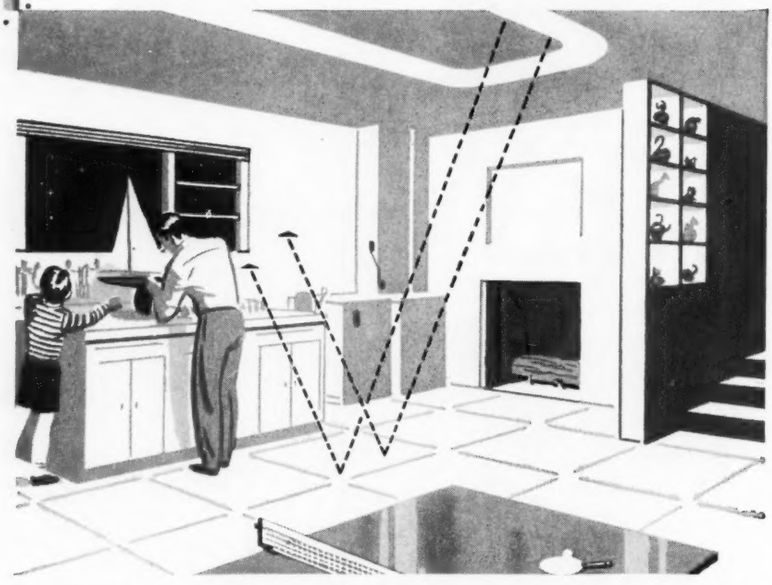
. . . AND DOES IT BETTER . . . INSIDE OR OUT!

. . . WHITE DOES MORE . . .

Trinity White

PORTLAND CEMENT

. . . the whitest white cement . . . a true Portland Cement



A Product of GENERAL PORTLAND CEMENT CO. • Chicago • Dallas • Chattanooga • Tampa • Los Angeles

---

• IMMEDIATE DELIVERY! •

FAMOUS BESSLER Disappearing STAIRWAY

The big problem in modern housing is: *more room at slight extra cost.* Cash in on this need NOW, with the original and genuine Bessler Disappearing Stairway. Affords quick, easy access to upper areas; folds up into ceiling; takes up no space in room below. Hundreds of thousands sold in the last 40 years. We can fill your requirements right now—get the steady extra profits that this high-utility product can assure you.

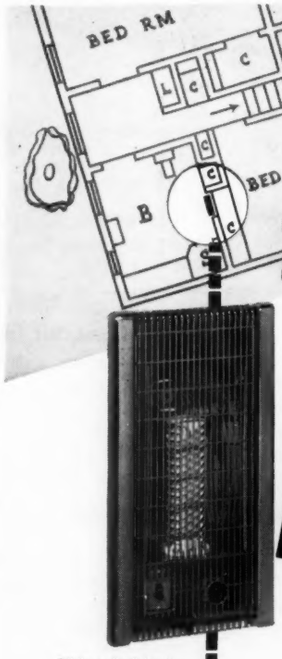
FEATURES:

1. Seven models
2. A real stairway
3. Operates from above and below
4. Full width treads
5. Full door width
6. All steps equal height
7. For old and new installations
8. Safety-engineered
9. The *original* disappearing stairway
10. Tailor made for all heights

WRITE FOR DETAILS!

The BESSLER Disappearing Stairway Co.

1900 East Market Street, Akron 5, Ohio



TRY THIS on your NEXT BATH

Increase the home value and customer appeal with perfect bathroom comfort, easy, economical installation. Simply specify Wesix

AUTOMATIC Electric Heat

120 or 240 Volts
1000 to 1500 Watts

The WESIX "Automatic", a completely automatic, electric wall furnace for bathroom use is handsomely finished in sparkling, durable nickel—fits easily into standard walls—guarantees customer comfort.

For complete details and specifications see Sweets Architectural File

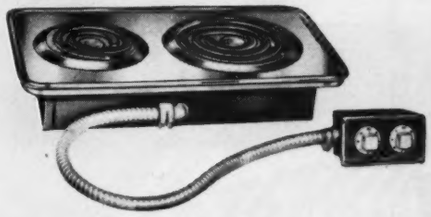
or write: **WESIX ELECTRIC HEATER CO.** Room 20
390 FIRST STREET • SAN FRANCISCO 5, CALIFORNIA
LOS ANGELES • PORTLAND
SEATTLE • HUNTSVILLE, ALA.

WESIX Wiredheat

LECTRO L&H HOST

Now, for appealing, flexible kitchen arRANGEments

No. 5810 Oven with Automatic Time Control and electric clock, Oven Temperature Control with automatic pre-heat, interval timer, appliance outlet, oven light. Heavily insulated with Fiberglas. Inside size: 16" x 17" x 19¼"



No. 5810-U Surface Unit
with two Monotube heating elements, one 8 inches and one 10 inches.

NEW L&H "CUSTOM-BILT" (TRADEMARK) built-in electric range components

The built-in range is here! Decorators and designers proclaim the death of the "laboratory look" as the new ranges blend into modern kitchens.

And L&H, pioneer in the electric range field, gives you the "Custom-Bilt," the last word in flexibility, beauty, and quality — for big homes or little.

Women love the huge wall oven (it holds six two-lb. loaves of bread) that can be installed at any height, ends awkward stooping. Surface units come in multiples of two, permitting the right range capacity for every family. Switches and signal light can be installed wherever wanted.

Unit surfaces and oven fronts are stainless steel — bright, beautiful, saleable.

And every part is backed by the L&H reputation for quality and long life. Investigate the possibilities of the L&H "Custom-Bilt" electric range components.

A. J. Lindemann & Hoverson Co.
The Finest in Home Appliances Since 1875
Milwaukee 15, Wisconsin

Tear out coupon and send Today!

A. J. Lindemann & Hoverson Co.
601 W. Cleveland Ave., Milwaukee 15, Wisconsin

Please send me data on your "Custom-Bilt" electric range components of interest to:
☐ Architect ☐ Builder ☐ Dealer ☐ .....

Name.....

Firm.....

Address.....

City.....State.....

8-2

Be sure of a

HEALTHIER HOME

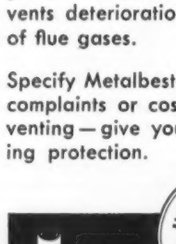
WITH METALBESTOS GAS VENT

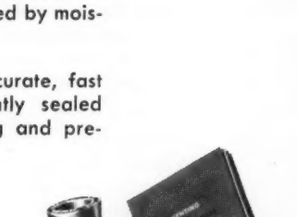
Every home—regardless of cost—should have the benefits of safer, more efficient gas venting.

Metalbestos' insulated double wall construction assures clean, fresh air—free of fumes and musty odors—throughout prolonged operation of gas appliances. It gives maximum protection to walls, draperies and furnishings against damage caused by moisture condensation.

Special precision-formed couplers make possible accurate, fast assembly—cut installation costs—and provide tightly sealed joints. All aluminum construction eliminates cracking and prevents deterioration from the corrosive effects of flue gases.

Specify Metalbestos—protect yourself against complaints or costly repairs due to improper venting—give your clients the finest in venting protection.





Send for
FREE VENTING MANUAL

This useful manual, "Venting of Gas Appliances," contains important rules and helpful tips on approved venting practices. No cost or obligation.

Write today to Dept. **D.**

METALBESTOS DIVISION

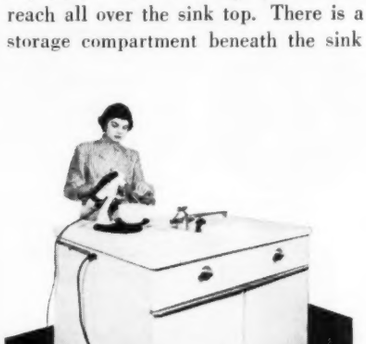
WILLIAM WALLACE COMPANY · BELMONT, CALIF.

PRODUCT NEWS

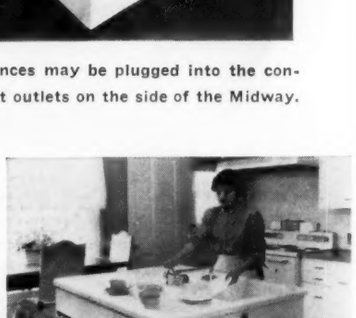
FREE-STANDING SINK cuts homemaker's daily kitchen mileage

Master plumbers swarming over Atlantic City, N. J. last month had a lot to see in the beauty-famous resort, but their wives kept leading them up to the 15.4 sq. ft. of Convention Hall where American-Standard had plunked its *Midway* sink. The new rectangular island appliance has an air of opulent sensibility that should appeal as much to interior designers as to the gals who spend a good part of the day in kitchen maneuvers. The *Midway's* step-saving convenience can be grasped without show-me diagrams. Set in the middle of the kitchen, the double sink unit serves as a versatile food preparation center. It has a large work surface supplemented by a sliding drainboard (the cast-iron top is coated with acid resistant enamel).

The faucets can be worked one-handed from any side, and a flexible spray attachment will reach all over the sink top. There is a large storage compartment beneath the sink wells



Appliances may be plugged into the convenient outlets on the side of the Midway.



and drawers and shelves are provided on the other side for utensils and groceries. A clean horizontal band with a recessed finger grip acts as the pull for the cabinets. Dials on the side of the sink open and close the drains, and also can be used to control a food waste disposer. The approximate cost to consumer for the *Midway* is about $400.

(Continued on page 158)

INSIDE as well as Outside

NATIONALS LEAD in SALES APPEAL!

National's attractively-designed exteriors and carefully-planned interiors, including such appealing features for comfortable living as spacious living rooms . . . step-saving kitchens . . . roomy closets, thrill home hunters and sell more houses for National Homes dealers. Dealer franchises are available for certain areas. Write today — your locality may still be open.

"National Homes prefabricated panels and structural parts are commended by Parents' Magazine as advertised therein." And recommended by 38,000 delighted owners.

COMMENDED BY THE CONSUMER SERVICE BUREAU OF PARENTS' MAGAZINE AS ADVERTISED THEREIN

National HOMES

NATIONAL HOMES CORPORATION

LAFAYETTE, INDIANA • HORSEHEADS, NEW YORK

NATION'S LARGEST PRODUCERS OF QUALITY HOMES AT THRIFT PRICES

It's your new house—

but it's their new home

THERE are lots of new kids in lots of new neighborhoods these days. That's because a *million families are moving into a million new homes this year!* And there will be other millions next year . . . and the year after that . . . as the home-building industry maintains a steady volume of 1,000,000 NEW HOMES EVERY YEAR!

What do folks look for when they buy a house?

The intangibles . . . *the dream of home*—the countless emotional drives that make one family want a cozy Cod-der . . . another family—a rambling Ranch-er!

And the tangibles . . . *the stuff the dream is made of*—roofing, steel trusses, cantilevered ceilings, plumbing, stone, brick, glass . . . do-everything appliances that mean more leisure time . . . new exterior and interior finishes—better insulating materials—new heating methods—all the technical advances that mean lower upkeep!

The new homes that sell faster are the ones with the best-known refrigerator . . . plumbing . . . glass . . . roofing. Brand names that have been made familiar to potential homebuyers through national advertising.

By far the quickest, *most effective way to get the makings of a house known to the public is through the advertising pages of LIFE*, the magazine with the largest audience in publishing history—23,950,000 people every week—62,600,000 in the course of 13 issues—more than *half the nation!** In this tremendous audience are 32,800,000 people aged 20 to 44*—the best new-home prospects.

Folks like LIFE—read it with a unique page-by-page excitement and urge to action that spills over onto its advertising pages.

Make the houses you plan and build more easily salable—be sure they feature the products that are *advertised in LIFE!*

*From *A Study of the Accumulative Audience of LIFE*, by Alfred Politz Research, Inc. A LIFE reader is any person who has read one or more of 13 issues.

LIFE

First in circulation

First in readership

First in advertising revenue

9 Rockefeller Plaza, New York 20, N. Y.

NOW...a versatile building panel

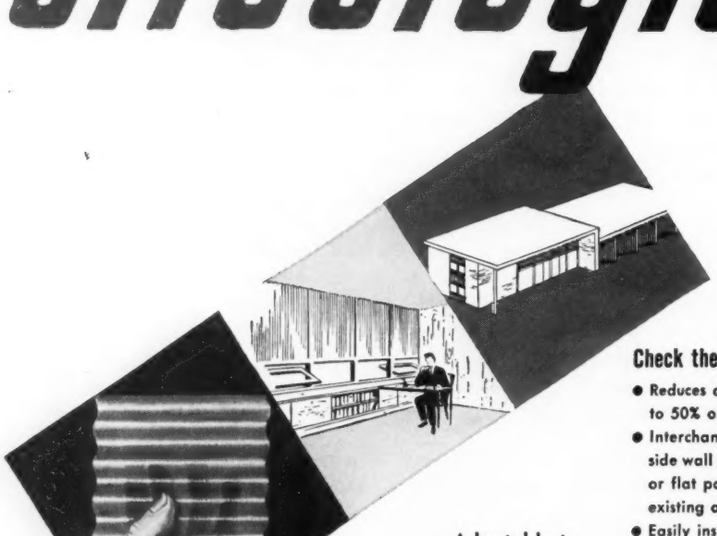
to add daylighting efficiency

and decorative appearance

to all types of

construction

structoglas



Adaptable to unlimited uses for maximum lighting efficiency or unusual architectural effects, STRUCTOGLAS offers economy, durability, high level transmission of natural diffused light... plus attractive appearance. This translucent, Fiberglas-reinforced building panel is extraordinarily strong, yet lightweight; low cost but long-lasting!

Check these features:

- Reduces daylighting costs up to 50% or more.
- Interchangeable with corrugated side wall and roof construction, or flat panels, in both existing and new construction.
- Easily installed.
- Maintenance-free.
- May be cut, sawed, nailed, bolted, drilled or punched.

Widely used for:

- Skylights.
- Window walls.
- Office partitions (fixed or moveable).
- Shower and toilet partitions.
- Canopies and awnings.
- Interior wall panels.
- Decorative exterior facings and many others.

Translucent colors: *Surf Green Crystal Blue • Harbor Blue Tangerine • Ivory • Lemon Yellow*

Opaque colors: *Tile Red Sunflower Yellow • Emerald*

Available in standard heavy and extra heavy corrugations to match metal and asbestos cement in standard sheet sizes up to 12 feet in length. Also available in flat stock.

See our catalog in Sweet's File, Architectural

For full details, send this coupon today!

STRUCTOGLAS *Division of*
international molded plastics, inc.
4387 West 35th Street, Cleveland 9, Ohio

Please send me complete Structoglas information.

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

HH-7

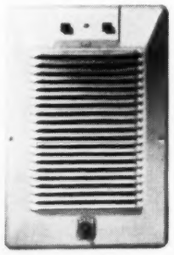
PRODUCT NEWS

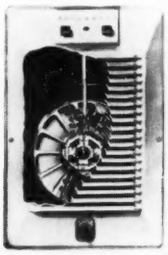
In some states (New York and New Jersey among them) because of plumbing regulations, the unit will be almost free-standing, a peninsula tied to the kitchen ceiling by an umbilical waste stack. A-S has devised some novel cabinet arrangements, however, to disguise or capitalize on the pole. And then, there is always the accommodating, rambling philodendron . . .

Manufacturer: American Radiator & Standard Sanitary Corp., Box 1226, Pittsburgh 30, Pa.

BUILT-IN ELECTRIC HEATER provides year round air comfort

Well known for handsome and practical built-in cooking units, Thermador is now making a wall-type electrical heater that is useful in hot weather as well as cold. The newly styled heater features a small but effective turbine-type fan which circulates warmed air, and may be used alone during summer months to

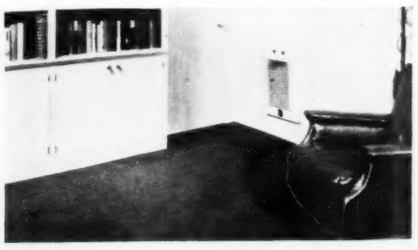




keep unheated air circulating throughout the room.

Engineered to fit between 16″ o.c. studs without additional framing, the 22¾″ tall heavy-duty heater requires a 230 v. AC line. Retail prices run from $64.50 for the switch controlled 2,500 w. model having an hourly Btu output of 8,530, up to $93.50 for a thermostatically operated 4,500 w. heater with an output of 15,354 Btu's.

In areas where utility companies are sympathetic to heating by electricity (and express their sympathy in low power rates) the



Thermador heaters may be used in multiples to set up an inexpensive heating system—without flues, vents or ductwork.

Manufacturer: Thermador Electrical Mfg. Co., Los Angeles, Calif.

(Continued on page 162)

COMPARISON TEST PROVES

Kaustine

SAVES HEATING DOLLARS!

SIDE BY SIDE records were kept by Mr. Lester A. Sharrier of the Anchor Sheet Metal Works of Crawford, N. J., during a comparison test between a number of Kaustine Oil Fired Furnaces and the nationally advertised units of other furnace manufacturers.

The test, made in the same tract of homes over a period of two years, showed an oil consumption cost averaging between $90.00 and $100.00 a year on the Kaustine units as compared with $120.00 to $135.00 for the other equipment.

Mr. Sharrier also says "... we have had less service trouble with your units than any of the others we have ever installed ... and we believe your burner and furnace to be one of the finest on the market."

Write for full information to Dept. H-7

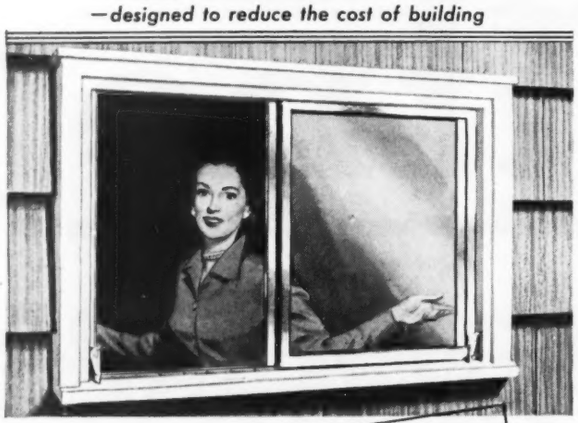
KAUSTINE QUALITY SERVICE SATISFACTION

Kaustine COMPANY, INC.
PERRY, NEW YORK

FOR SAVINGS

Modulated Warm Air Furnaces from 65,000 to 270,000 B.T.U.
Septic Tanks ... Pressure Vessels ... Oil and Gasoline Storage Tanks ... Truck Tanks ... Custom Built Fabricated Equipment

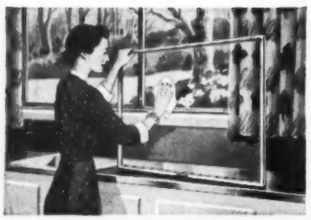
another **HOMASOTE FIRST**
—designed to reduce the cost of building



Introducing the

Nova-Vita

horizontal-sliding window



For every room in the house

The panes of these windows —framed in satin-finish aluminum sash—ride on nylon shoes over fiberglas tracks!

In these few words, you have the primary reasons why the new Nova-Vita Window provides beauty, efficient performance and lifetime money savings—in a way other types of windows cannot.

When fully closed, the two panes lock automatically and are tamper-proof from the outside. Opened, each pane is quickly removable from inside the house. For full ventilation, on a warm day—or for washing—both panes can be removed entirely, in a matter of seconds.

Standard equipment with each window: an aluminum tension screen; wood window frame, sill and drip cap—all assembled, toxic treated, primed, ready to install in opening.

Accept the fact that a Nova-Vita Window is built to outlast the house itself. Then add these facts... *there are no sash balances or counterweights, no operating cranks, no projecting hinges. And a Vinyl gasket has eliminated all puttying, forever!* The Nova-Vita Window is not only more attractive and more convenient in every way; it is lastingly trouble-free.

Let us send you fully illustrated and detailed literature.

NOVA SALES CO., Dept. 94A
Trenton 3, N. J.
Send details on NOVA WALL UNITS

Name.....

Address.....

City.....State.....

My lumber dealer is.....

NOVA SALES Co. TRENTON 3, N. J.

A wholly owned subsidiary of Homasote Company—manufacturers of the oldest and strongest insulating-building board; wood-textured and striated panels.

SEE OUR CATALOG IN SWEET'S

NO DANCING!

Dance only for joy with new, different, better DURALL tension screens!

SAVE TIME! Duralls snap into place from inside your window. 2 easy clamps grip screen to window frame. *All in just 9 seconds!*

SAVE SPACE! To store Duralls unsnap, roll up, slip into handy cartons, store in nearest closet! *Duralls weigh just ounces!*

SAVE TROUBLE! Duralls make window washing a snap. Release two clamps and Durall hangs loose as a shade! So easy to reach outside.

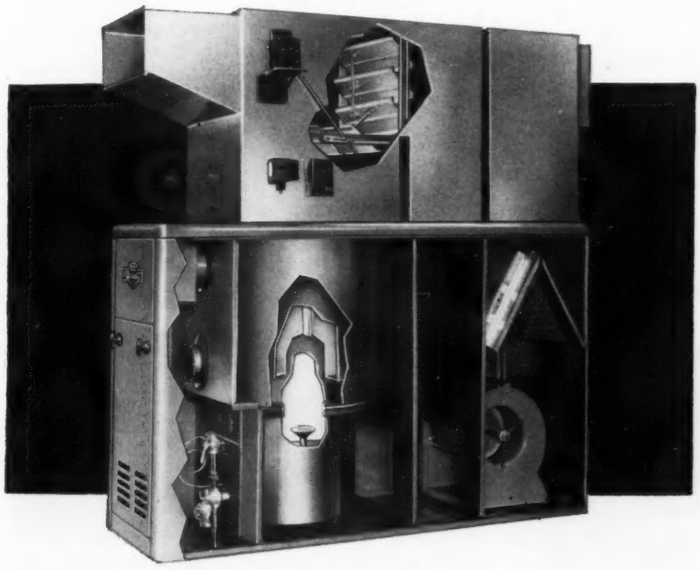
SAVE WORK! Duralls never need painting or weatherproofing They're rugged and durable. They never rust or stain your house!

SAVE MONEY! Duralls *do more, cost less, last longer* than ordinary, old-fashioned screens. Write for our Catalog AIA-35-P-1.

NEW YORK WIRE CLOTH COMPANY, New Canaan, Conn.

. . . and they lived happily ever after

A fairy story ending? Not really. Modern heating means healthier, happier and more comfortable living . . . and to keep *your* clients happier, you'll want to specify the Waterbury "Comfortrol" System . . . the latest in modern heating. Waterbury "Comfortrol" is thoroughly dependable, economical, and completely automatic—the finest warm air heating and winter air conditioning system a home can have.



"Comfortrol" is a face and by-pass system which assures a continual even flow of warm air . . . modulated to eliminate abrupt temperature changes. Available in both oil and gas-fired units, Waterbury "Comfortrol" systems are equipped with Minneapolis-Honeywell modulating controls and dampers.

In addition to the "Comfortrol", Waterbury manufactures a complete line of warm air heating units. Remember, there's a Waterbury for every size home and every type of fuel.

For complete information on "Comfortrol", contact your local Waterbury dealer or write direct.

The Waterman-Waterbury Co.

OVER 45 YEARS OF WARM AIR HEATING

1150 Jackson Street N. E. • Minneapolis 13, Minnesota

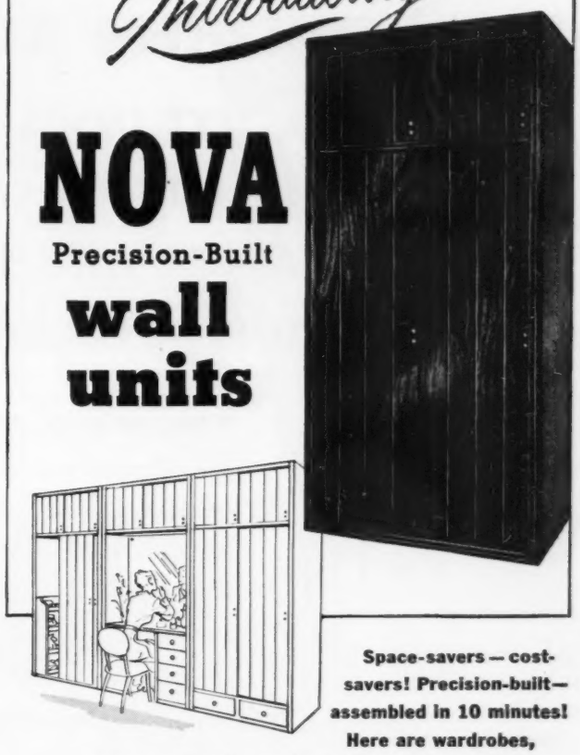
another **HOMASOTE FIRST**
—designed to reduce the cost of building

Introducing

NOVA

Precision-Built

wall units



Space-savers — cost-savers! Precision-built—assembled in 10 minutes! Here are wardrobes, storage wall units, vanity units, dressers, desks, bookshelves, bath storage units, hospital wardrobes...

The storage wall is a recognized and important new development in modern design. Now it includes "built-in furniture" units. Nova Wall Units can be used individually; each is a finished piece of furniture. Used in combination, there is no sense of "sectionalizing". With 2′2″ maximum depth, they save space over conventional storage furniture. Used in new construction, they can save as much as 5′ in total house length.

Nova Wall Units can replace walls—with units back to back or alternately serving different rooms. Inner walls and backs are insulating, sound-deadening and mildew-proof. Fronts are of finest plywood or lumber—from birch and gum to imported mahogany. These units are supplied unfinished—or with prime coat, paint, stain or furniture finish.

Free planning service. We offer 48-hour service to any architect or builder—providing detailed specifications for any given area in either new construction or modernization.

Let us send you fully illustrated and detailed literature.

NOVA SALES Co. TRENTON 3, N. J.

A wholly owned subsidiary of Homasote Company—manufacturers of the oldest and strongest insulating-building board; wood-textured and striated panels.

SEE OUR CATALOG IN SWEET'S

NOVA SALES CO., Dept. 95A
Trenton 3, N. J.
Send details on NOVA WINDOWS

Name.....

Address.....

City.....State.....

My lumber dealer is.....

Specify ALFOL BUILDING BLANKET

THE REFLECTIVE INSULATION THAT COMBINES A POSITIVE CONTINUOUS VAPOR BARRIER WITH SAG PROOF, RIP RESISTING APPLICATION.

When you specify Alfol Building Blanket your client gets the finest in reflective insulation. The pure aluminum foil surfaces instantly and continuously reflect 95% of all radiant heat. And Alfol, because it is applied in a continuous length across the stud faces, provides the finest moisture protection obtainable—at any price.

Remember **– ONLY ALFOL HAS BOTH THESE GREAT FEATURES**

1. Suspended aluminum foil sheets providing multiple reflective air spaces.
2. Heavy water-proof duplex backing for continuous moisture protection and positive application support.

Alfol is manufactured in five types in four standard widths of 12", 16", 20" and 24" in continuous rolls of 250 sq. ft.

ALFOL THE FIRST IN REFLECTIVE INSULATION

Free 114-page architects data book available upon request. Address Dept. A-6.

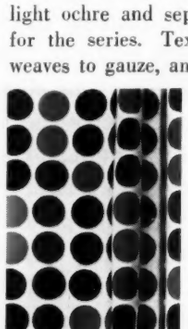
REFLECTAL CORPORATION

155 E. 44TH ST., . . . NEW YORK 17, N. Y.

PRODUCT NEWS

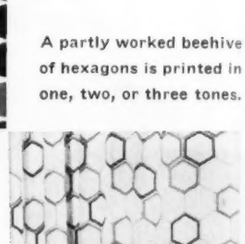
COLOR-RELATED FABRICS for upholstery and curtains range from rugged to gossamer

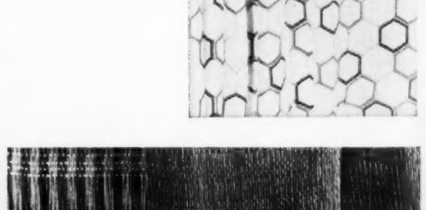
Joining Charles Eames and George Nelson on Herman Miller's Design Committee is Alexander Girard an architect-designer who brings to the furniture firm a carefully integrated line of contemporary fabrics. Upholstery, drapery and curtain cloths are included in the correlated collection which is based on a limited color scale. Intense spectrum tones—violet, magenta, crimson, orange, yellow, emerald green, turquoise and ultramarine—and the neutrals—white, black, dark gray, raw umber, light ochre and sepia—comprise the palette for the series. Textures range from tweed weaves to gauze, and print patterns are kept



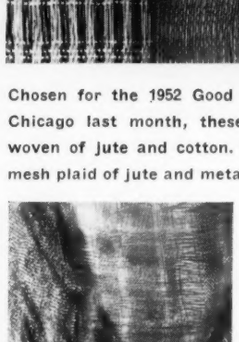
Half-dollar coin dots of red, black and blue, on natural linen $4.20 per yd., retail; on silk gauze, $5.25.

A partly worked beehive of hexagons is printed in one, two, or three tones.





Chosen for the 1952 Good Design exhibition in Chicago last month, these Girard fabrics are woven of jute and cotton. Below, a sheer open mesh plaid of jute and metallic threads.



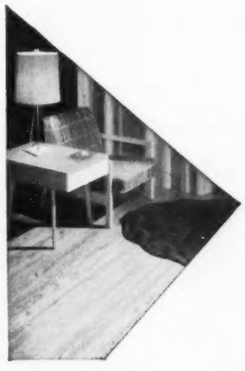
(Continued on page 166)

OAK FLOORING BENEFITS CAN BE INCLUDED IN HOMES OF ALL PRICES

The fact that a home carries a "low-cost" price tag is no reason that certain basic fundamentals should be cut down or eliminated. These basics are durability, economy, beauty and "healthfulness." And in flooring, *all* the basic fundamentals are provided only by oak.

Oak flooring can now be laid over concrete slabs, using screeds set in mastic. This FHA-approved method makes it possible for even the lowest cost homes to get the basic benefits of oak. There are also grades of oak flooring to match practically every building budget.

It's a fact that women especially, look for oak flooring when buying a new home. They know that oak is the easiest of all flooring to maintain. Experience has proved to them that oak keeps that "just-installed" look for a lifetime, with a minimum of upkeep.



Oak is the flooring

that 85% of all prospective homeowners want

SEND TO NATIONAL OAK FLOORING MANUFACTURERS' ASSOCIATION, STERICK BLDG., MEMPHIS 3, TENNESSEE
FOR FREE, FHA-APPROVED INSTRUCTIONS FOR LAYING OAK OVER CONCRETE

In SMALL HOUSES

LUXURY HOMES

and BIG BUILDINGS

Gate City

Preservative-Treated Wood

AWNING WINDOWS

represent *more* than a SAVING in TIME, LABOR and MONEY to both builders and owners.

Each window is delivered to the job as a "Packaged" unit, factory assembled, including glazing and hardware. Three stock sizes meet most requirements.

AWNING WINDOW climate control features include 100% ventilation, draft control, protection from rain when windows are open and guard against prowler entry.

The operating handle is below the sill where it does not interfere with venetian blinds.

IF YOUR LOCAL BUILDING SUPPLY DEALER CANNOT SUPPLY YOU, WRITE TO

GATE CITY SASH & DOOR CO.

"Wood Window Craftsmen Since 1910"

P.O. Box 901, Fort Lauderdale, Florida

OUR FREE ENGINEERING SERVICE WILL ASSIST YOU WITH ANY WINDOW PROBLEM.

Mail Coupon for Latest Information

H&H-7

GATE CITY SASH & DOOR CO.
P.O. Box 901, Fort Lauderdale, Florida
Gentlemen: Send complete information and literature on GATE CITY Awning Windows.

NAME_____

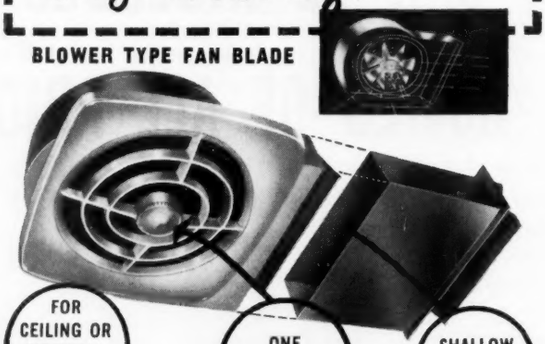
ADDRESS_____

CITY_____ STATE_____

BERNS AIR KING KITCHEN FANS

they're new—all the way through!

BLOWER TYPE FAN BLADE



Every feature you've ever wanted in a kitchen fan! New BLOWER-TYPE BLADE maintains constant high volume in long ducts . . . prevents motor burnouts due to clogging of ducts. Extremely powerful yet so quiet as to be practically unnoticeable. Chrome or White Enamel grille removable merely by unscrewing handy center knob. Frame mounts between 16" studs or center joists. Outside zinc frame will never warp or rust. Complete 3-speed control switch available at $5.95 list. 10" model. List, incl. excise tax.....**$34.95**

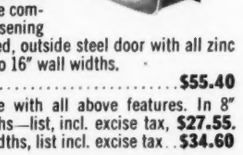
NO RODS or CHAINS!

Wall Switch Controlled

SIDE WALL MODEL

Flick of the switch starts and stops motor, opens and closes outside door. Same grille and construction features as ceiling model. Motor and blade completely removable by merely loosening two screws. Air tight, rubber lined, outside steel door with all zinc outer frame. 10" model for 5½" to 16" wall widths. List, incl. excise tax.....**$55.40**

Pull Chain Model also available with all above features. In 8" models for 5" to 15¾" wall widths—list, incl. excise tax, **$27.55.** 10" model for 5½" to 16" wall widths, list incl. excise tax..**$34.60**



NEW Packaged Ceiling Fan

Ready for installation right in its own "built-in" frame where minimum height doesn't permit usual attic fan. Sealed for life shaft bearings set in solid rubber for extreme quiet . . . sealed lubrication, ball bearing motor. In 24" to 42" models . . . list price as low as **$110.00** incl. excise tax. Shutters optional and extra.

Available through leading Electrical Wholesalers everywhere. Or write for descriptive literature to . . .

BERNS MFG. CORPORATION

3050 NORTH ROCKWELL STREET, CHICAGO 18, ILLINOIS

FOR EXPORT, WRITE TO: Thomas International, Inc., 608 So. Dearborn St., Chicago 5, Ill., U.S.A.

BRADLEY

PREFINISHED OAK FLOORS

Give You So Much More!

. . . Here Are Two Stand-out Reasons:

1. *Straight-line* ripping by specially designed saws, used in processing rough oak for the flooring machines, produces *precisely straight strips.* This exclusive method *eliminates crook,* so that the finished tongue and groove strips draw up *exactly parallel from end to end.* Result: a stress-free, stabilized floor that *stays* mirror-smooth.

In Bradley Unit Block assembly, the straight-line feature assures total integration in matching and splining of component strips.

2. Bradley's penetrating primer, superior transparent finish and heavy-bodied wax are mechanically applied and buffed with precision uniformity. Costing less than sanding and finishing on the job, this formula and method bring the natural figure of oak into clear relief and provide a floor of rich luster and matchless decorative beauty.

Bradley's premium quality hardwood floors include standard *straight-line* strip and Unit Blocks* in Oak, Beech and Pecan; Random Width Oak Plank; each prefinished or unfinished. For complete specifications see Sweet's Architectural and Builders Catalogs, or write for your file copy.

**For mastic or nail installation.*

BRADLEY

BRAND BRADLEY

LUMBER COMPANY of Arkansas • WARREN ARKANSAS

Add a PLUS to your plan with an R&M "PACKAGE" ATTIC FAN!

NO "EXTRAS." Everything needed arrives on job in a package. Including automatic ceiling shutter, from $154.93*, retail.

Plan cool summer comfort into a home and it's easier to sell. The owner's family is happy, he's proud, and he tells his friends of your thoroughness, your thoughtfulness.

Easy installation. R & M "Package" Attic Fans with certified air deliveries of 4750 and 6800 CFM cut installation costs to the bone. Fan simply sets over roughly framed opening, no finishing needed. Rubber cushion seals fan frame to ceiling opening. Ceiling trim is part of complete automatic shutter assembly. Also available in easy-to-install sizes up to 16,000 CFM.

Ideal for low attics and all standard hallways. Perfect for "moderns" with limited attic clearance. Quiet, too. Moving parts are rubber-mounted. Factory-lubricated, sealed ball bearings on fan and motor. Fan guaranteed five years; motor and shutter, one year.

An informative, fact-filled booklet on R & M Attic Fans is yours for the asking. Send the coupon for your copy now.

Consult Sweet's Architectural File for complete Robbins & Myers cooling and ventilating data.

ROBBINS & MYERS

"Package" attic fans

Atlanta, Boston, Chicago, Houston, Kansas City, Los Angeles, Minneapolis, New Orleans, New York, Orlando, Philadelphia, San Francisco, Springfield, Ohio

IT'S FREE!

A FEW ITEMS FROM THE TABLE OF CONTENTS!

- Comfort cooling by attic ventilation.
- Round-the-clock comfort with air cooling.
- How to determine fan size.
- Installation for any type of home.
- Commercial ventilating and cooling details.
- Industrial ventilation—principles and methods.

**Price subject to change without notice*

ROBBINS & MYERS, INC., FAN DIVISION MB-72
387 So. Front St., Memphis 2, Tennessee

Please send me your booklet—"Robbins & Myers Package Attic Fans, Belt-Driven Fans." A.I.A. File No. 30-D-1.

Name.....

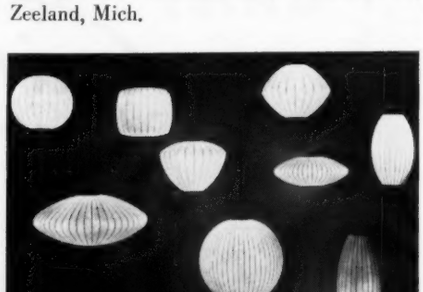
Address.....

City.....*Zone*.....*State*.....

PRODUCT NEWS

to sedate geometrics. Retail prices for the 30 different materials also are modestly confined, running from $3.15 to $10.50 per yd.

Manufacturer: Herman Miller Furniture Co., Zeeland, Mich.



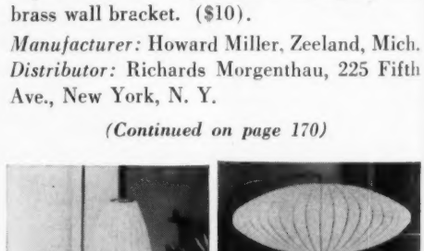
FLOATING GEOMETRY. Spheroid light fixtures have vinyl skins over steel wire skeletons

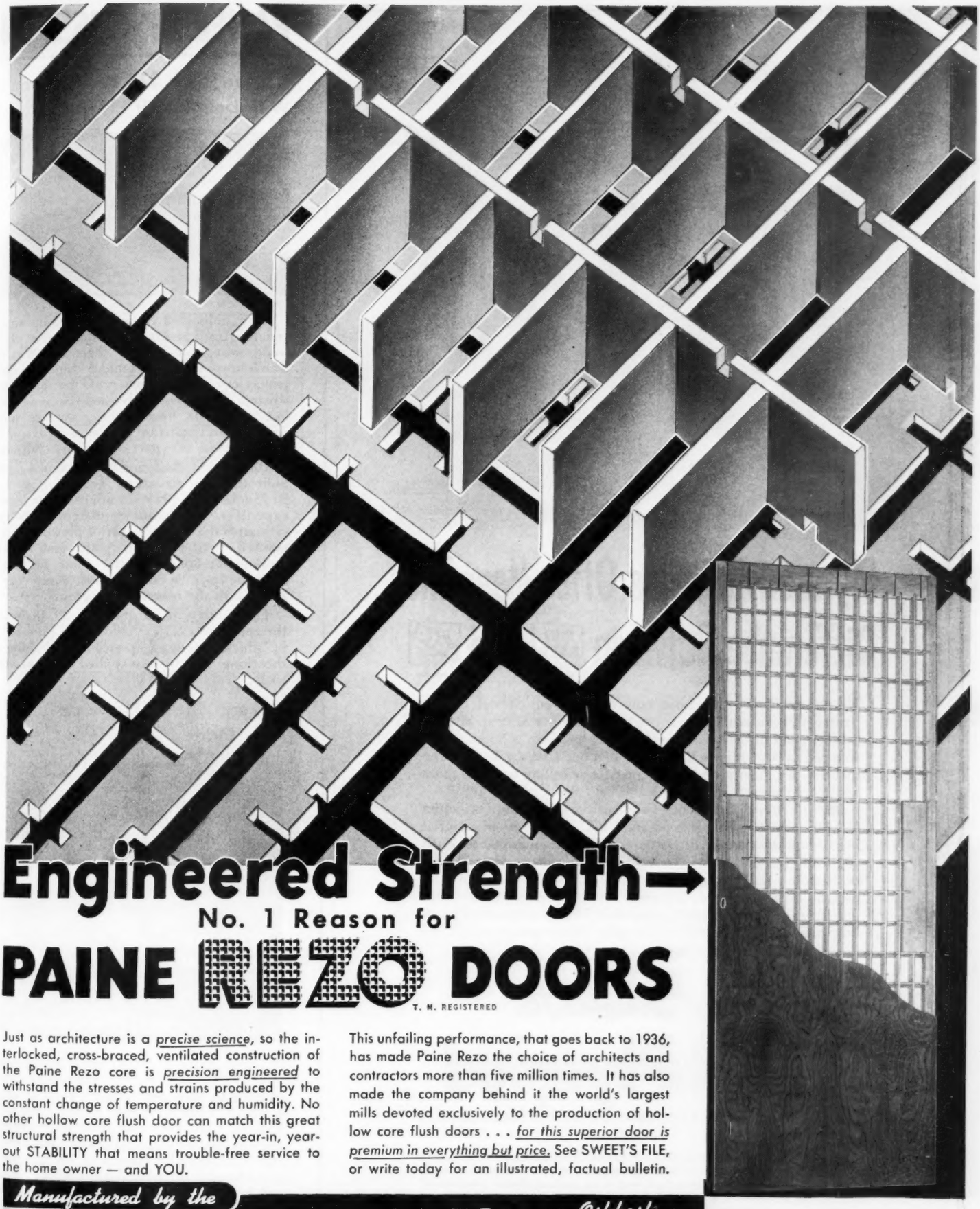
In a prediction made over a parfait in Chicago during the hectic Summer Market opening, George Nelson told earnest shelter and building book editors that we all may soon be living in Buckminster Fuller plastic domes. Perhaps for these plastic lighting balloons, the prolific Mr. Nelson drew inspiration from B-F's geodesic structures—or, maybe from the season's first watermelon. In scale the new fixtures lie somewhere between nature's garden and Bucky's shelters. The parabolic beret above left is a yard wide, and the big bubble is 26″ in diameter.

Actually, the simple lamps provide as much good atmospheric light as they do good fun. Their sprayed vinyl skins diffuse the light from ordinary 300 w. (or less) bulbs evenly and take on the color of any lamp used. Most of them could float happily only in spacious showrooms, lobbies or designers' high ceilinged offices. A few of the interesting shapes —the smaller beret and the little (13″ high) tom-tom—which was tapped for the current Good Design show—are suitable for contemporary homes. Retail prices range from $25 to $50. All the fixtures have the rings on top and bottom which may be attached either to a tripod floor stand ($4) or a mahogany and brass wall bracket. ($10).

Manufacturer: Howard Miller, Zeeland, Mich. *Distributor:* Richards Morgenthau, 225 Fifth Ave., New York, N. Y.

(Continued on page 170)





Engineered Strength→

No. 1 Reason for

PAINE REZO DOORS

T. M. REGISTERED

Just as architecture is a *precise science*, so the interlocked, cross-braced, ventilated construction of the Paine Rezo core is *precision engineered* to withstand the stresses and strains produced by the constant change of temperature and humidity. No other hollow core flush door can match this great structural strength that provides the year-in, year-out STABILITY that means trouble-free service to the home owner — and YOU.

This unfailing performance, that goes back to 1936, has made Paine Rezo the choice of architects and contractors more than five million times. It has also made the company behind it the world's largest mills devoted exclusively to the production of hollow core flush doors . . . *for this superior door is premium in everything but price.* See SWEET'S FILE, or write today for an illustrated, factual bulletin.

Manufactured by the

PAINE LUMBER CO., LTD.

Oshkosh Wisconsin

ESTABLISHED 1853

Plywood Built-Ins Often Mean The Difference Between FOR SALE and SOLD

No DOUBT about it, plywood built-ins have buy-appeal. Space-thrifty plywood storage wall, built-in dining bar or crisp kitchen cabinets can often mean the difference between a house that's snapped up the minute it's offered and one that's a drug on the market—an important fact to consider as selling becomes more and more competitive.

And it's so easy to add client and customer-winning distinction to your homes with plywood built-ins. For no other material is so adaptable to specific design and space requirements. With plywood, you can make the built-in fit the house—*exactly*. No bothersome juggling of "stock size" units. No limit to size, design, finish or color. Plywood works quickly, easily with ordinary tools. It is equally adaptable for construction of shop-fabricated units. Plywood won't split, chip or puncture. *It's the logical material for every built-in.*

Douglas Fir

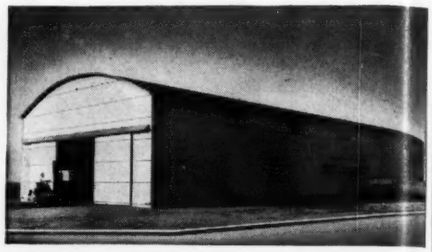
Plywood

AMERICA'S BUSIEST BUILDING MATERIAL

Portfolio of Prize-Winning Built-Ins. Valuable collection of designs that will serve as a springboard for your own imagination. Contains over 50 designs judged best in the national "Better Living Home" architectural contest. For your free copy write Douglas Fir Plywood Association, Tacoma 2, Washington.

PANEL DISCUSSION

Builder Saves $10 Per Square With Douglas Fir Plywood



With unlimited choice of building materials, Rusdick Lumber Sales chose plywood siding for its new Tacoma, Wash. warehouse and the builder reports the panels cut construction costs by $10 per square. "We chose plywood because we like a smooth, flush exterior surface but cost was an important factor and plywood was cheaper," says part-owner Russell Ross.

MacDonald Building Co. designed and built the new structure. According to L. B. MacDonald, plywood afforded the least expensive satisfactory construction. He estimates the in-place cost of plywood, unpainted, with studs 16″, o.c., and metal flashing, at $68 a square—some $10 less than the in-place cost of other siding combined with the necessary sheathing.

The building is 50′ by 150′, 20′ high to the roof trusses. PlyShield grade plywood. 5/8″-thick, was used as a combined siding-sheathing. Panels were applied horizontally with metal flashing.

PlyForm Grade Plywood Now Made In Two Types

The familiar PlyForm grade-name now identifies special concrete form grades within both Interior and Exterior-type fir plywood. Exterior PlyForm replaces the old Exterior Concrete Form grade-name. Identified by the new diamond-bar symbol shown above, Exterior PlyForm with 100% waterproof bond is intended for use where forms will be used until the wood itself is worn away. Simultaneously, the highly moisture-resistant glueline of Interior PlyForm has been fortified for better service, and up to 10 or 15 re-uses may be expected although glueline is not permanently waterproof.

(Advertisement)

Tests Prove Plywood's Great Resistance To Lateral Loads

New design data proving the extra strength and rigidity imparted by plywood subfloors and roof sheathing have been developed by plywood research engineers, culminating 14 months of tests. The new design data permits architects and builders to specify plywood floor and roof construction in schools, commercial and industrial buildings with full confidence that the structure will withstand the great lateral stresses caused by windstorms or earthquakes.

Plywood Thickness	Nail Size	Shear (lb-per-ft.-width) 2⅜" framing — Nail Spacing on all panel edges		
		6"	4"	3"
5/16", ⅜"	6d com.	185	280	315
⅜", ½", ⅝"	8d com.	265	400	450
½", ⅝"	10d com.	320	480	545

Tabulated shears should be reduced one-fourth for other than wind or seismic loads. Diaphragm width measured parallel with load.

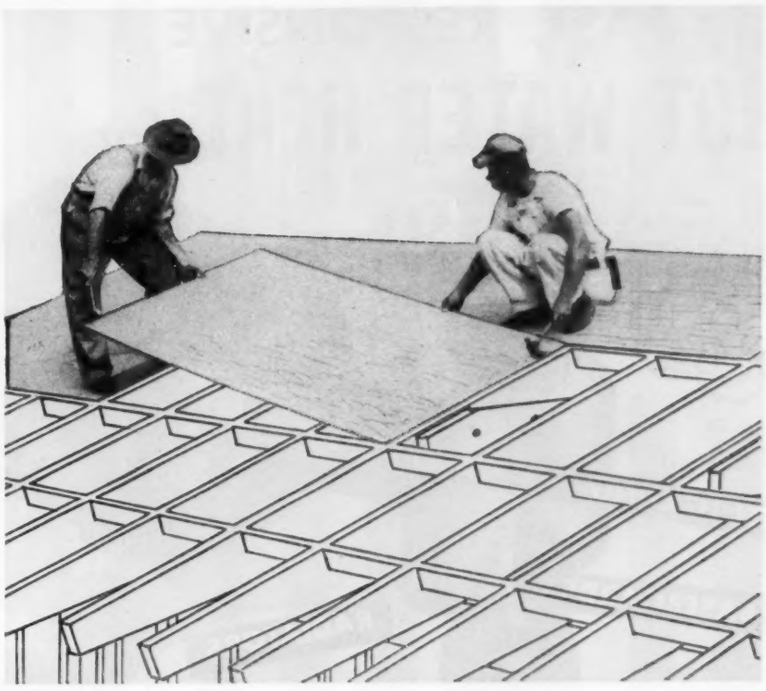
As one result of the tests, Uniform Building Code has been amended to permit greater allowable lateral loading for plywood diaphragms as shown above in condensed form. Complete data is available from Douglas Fir Plywood Association, Tacoma, Washington.

Plywood Helps Complete Rush Job On Schedule

A crew of 25 men completed construction of the new Lakewood (Wash.) Branch of the Puget Sound National Bank in 10 working days to hang up what might well be a record for buildings of its kind.

The final decision to rush construction of the 2,600 sq. ft. building was made by bank officials only 18 days before job completion. Architects Lea, Pearson and Richards went to work to meet the "impossible" schedule. To give the builder every opportunity to save time, they turned to virtually all-plywood construction. Drawings and specifications were completed within a week and work was begun under the direction of O. D. Parker, building superintendent for Ketner Bros., Inc., contractors.

According to both builder and architect, plywood made possible the speed of building. The big panels were used for combined siding-sheathing, gable ends, interior paneling, roof decking and underlay floors. The plywood board and batten siding is painted barn red to contrast with white flush-surfaced gabled ends. Interior paneling is painted light green.



Prove It Yourself-PlyScord® Roof Decks Actually Cost Less

HERE'S paper and pencil proof that you *can* cut costs with PlyScord grade plywood. Figure it *both* ways on the chart below. Then make a special note to put PlyScord on your next bill of materials—for better construction . . . for lower in-place costs.

Estimating Chart to Cover 1,000 Square Feet of Roof Area*

PLYSCORD	RATE	TOTAL	LUMBER	RATE	TOTAL
1,056 sq. ft. ⅜" or 5/16"			1,200 ft. b.m. 1x8 shiplap		
Nails 6d-12 lbs.			Nails 8d-20 lbs.		
Carpenter 6 Hours			Carpenter 11 Hours		
Helper 3 Hours			Helper 5 Hours		
TOTAL COST IN PLACE.....			TOTAL COST IN PLACE.....		

*Data developed from Walker's "The Building Estimators' Reference Book"

Douglas Fir **Plywood**

AMERICA'S BUSIEST BUILDING MATERIAL

® PlyScord is the unsanded construction grade of Interior-type plywood bonded with highly water resistant glues. For subflooring, sheathing, backing, one-use forms. PlyScord is a registered grade-trademark identifying quality plywood manufactured in accord with U. S. Commercial Standards and inspected by Douglas Fir Plywood Association (DFPA).

get FAST, RESPONSIVE
HOT WATER HEAT for

with this popular TACO CIRCULATOR

EVEN LOW BUDGET HOMES CAN NOW HAVE THESE LUXURY ADVANTAGES

RADIANT WARMTH • DRAFTLESS WARMTH • CONTROLLED WARMTH

MORE HOT WATER FOR KITCHEN, BATH AND LAUNDRY

Yes, forced hot water heat with a TACO circulator gives all this *plus* economical warmth. No need for a separately fired water heater. TACO TANKLESS, hooked up to a heating boiler, supplies year 'round *low cost* hot water.

The TACO circulator delivers heat where it will give the greatest comfort . . . whether you use radiant panels, convectors, radiators or baseboards.

ARCHITECTS—ENGINEERS WRITE FOR . . . SIMPLIFIED SELECTION CHART FOR SIZING TACO WATER HEATERS UNDER ANY CONDITIONS.

Three other famous TACO PRODUCTS for houses

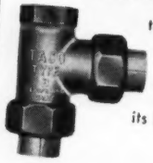
TACO-VENT

eliminates air from hot water radiation automatically

TANKLESS TACO

gives an abundant supply of hot water instantly. No need for storage tank.

TACO TEMPERING VALVE



thermostatically mixes hot water with cold so there's no danger of its being too hot.

Better Heating-
Better with Taco

Taco

TACO HEATERS, INCORPORATED • 137 SOUTH STREET • PROVIDENCE 3, R. I.

PRODUCT NEWS

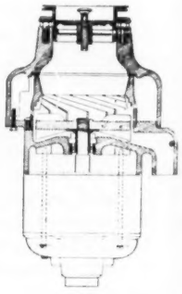
LOW SQUARE BATH keyed to small house and growing family

To help home designers conserve precious square footage, Kohler has developed a compact box-like bath, the *Standish*. Its low 14″ front and 5″ wide bench rim make it especially suitable for washing youngsters, and adults may use it either for showering or bathing. Measuring 42″ long, 31″ wide at the center and 34″ wide at the ends, the new model takes up about 17% less floor space (and costs somewhat less) than the standard 5′ x 30″ tubs. Its squarish shape works well in an alcove or recess. Constructed of rigid cast iron, the *Standish* has chromed fittings and is available in white or any of four pastel enamel finishes.

Manufacturer: Kohler Co., Chicago, Ill.

LOW PRICED GARBAGE DISPOSER fits any standard sink opening

Artichoke leaves, avocado seeds and other food waste which many disposer units find hard to digest, are said to be handled easily by the Pioneer *Polverizer*. Carrying Underwriters Laboratories' approval and a $77 price tag, the new 1′ high unit fits any standard 3½″ or 4″ sink opening, and usually can be installed with a minimum of fittings. The *Polverizer* is mounted on rubber cushioning and has permanently sealed bearings to assure quiet operation. Its cutting blades are rustproof steel alloy. To operate the disposer, the housewife turns on the cold water, flips a switch and feeds in the waste. An automatic shutoff prevents any overload.



Manufacturer: Pioneer Polverizer Co., 3131 San Fernando Rd., Los Angeles 65, Calif.

(Continued on page 174)

The Northwood

A Peaseway 2-bedroom home with optional breezeway and 2-car garage

COMPARE!
and you, too, will build
PEASEWAY

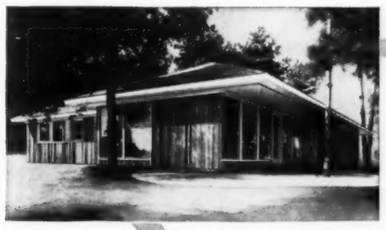
Peaseway homes
REG. U.S. PAT. OFF.
. . . first in better living.

Words and pictures can never convey to you the unexcelled quality, durability, livability and salability of Peaseway Homes. You must see these homes coming down the production line section by section . . . examine the quality of the selected materials . . . observe the precise factory-fit of every part. Your eyes will widen at the modern techniques and the craftsmanship which have made old fashioned building methods obsolete.

There's more, much more, to the story of Peaseway Homes—designs and floor plans ranging from a traditional small home of 691 square feet to a luxury home in contemporary design of 1410 square feet, with four bedrooms and two baths. Variations galore. Possibilities unlimited.

We invite all builders to come and compare. The builders who preceded you, came. They compared and now are building Peaseway Homes. Plan for an early visit to Cincinnati and Hamilton, Ohio. In the meantime write for complete information.

PRICES RANGE FROM $7700 · F. H. A. ACCEPTED



FIRST WITH CONTEMPORARY DESIGN IN THE PREFABRICATED FIELD

The Archwood, one of a number of Peaseway Homes in contemporary design— 1410 square feet, four bedrooms, 2 baths, and all insulated glass areas.

WRITE TO
PEASE WOODWORK COMPANY
ROOM 733
CINCINNATI 23, OHIO
"In business in Cincinnati since 1893"

Wall fabric decoration

...a wise combination of style and value

pre-trimmed ready to hang!

The new *pre-trimmed* 24-inch Wall-Tex simplifies wall decoration. Edges are trimmed straight and true. Anyone can apply it and be sure of professional results.

WALL·TEX
fabric wall coverings

Guaranteed by Good Housekeeping

Wall-Tex offers rich textures and distinctive beauty—plus sound basic features that builders and homeowners seek thru architectural service. Its sturdy fabric backing lends strength to all types of dry and plaster walls—and helps control the plaster crack nuisance. Its clear, uniform colors are safely washable, year after year. Because Wall-Tex is consistently advertised, it is widely known to be a happy combination of style, color and sound decorating value. Mail coupon for swatches and File Folder.

Columbus Coated Fabrics Corporation
Dept. AF-72, Columbus 16, Ohio

Send your new free File Folder and sample swatches.

*name*_____

*address*_____

MORE AND MORE

THE TREND IS TO

Thomason
FLUSH DOORS
(ALL WOOD THROUGHOUT)

From coast to coast, architects are specifying and builders are using THOMASON Flush Doors. It requires practically the entire production facilities of one of the two large plants of the THOMASON PLYWOOD CORPORATION to meet the demand.

AVAILABLE WITH THESE FACE VENEERS

In addition to the Gumwood faced door, the THOMASON Flush Door comes faced with veneers of Mahogany, Walnut, Oak, Birch, Knotty Pine, Cativo, or in any face veneer desired.

ALSO MADE FOR EXTERIOR USE

Available either plain or with any one of five standard patterns of light opening. Or you may have the THOMASON Flush Door with a solid all-wood core, faced with any type of veneer desired.

Sold Only Through Distributors

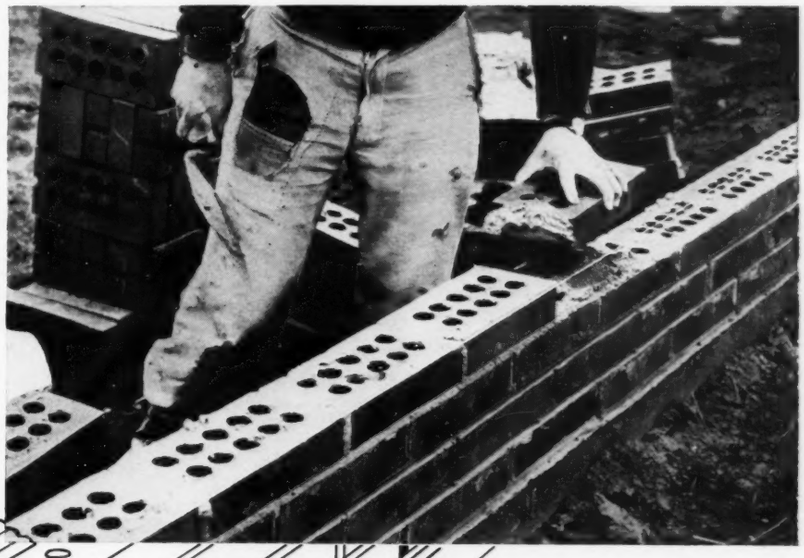
THOMASON
PLYWOOD CORPORATION
FAYETTEVILLE • NORTH CAROLINA

Joseph Goldman, Vice President
American Community Builders
Park Forest, Illinois

TOP BUILDER'S VERDICT:

"SCR brick* ....an improvement both in construction and ultimate value, yet the original cost is less."

That's what Joseph Goldman of American Community Builders says about "SCR brick" —the new THRU-THE-WALL unit for residential construction. Tested in one of his Park Forest, Illinois, houses, "SCR brick" walls offered the advantages shown here.



SAVES TIME AND MATERIALS

THRU-THE-WALL unit eliminates materials, builds 100 sq. ft. of wall per day—a 60%–100% increase. Larger dimensions (2⅛" x 5½" x 11½") speed construction.

"Quik-Way" clips simplify furring.

Slot speeds window and door installation.

BUILDS WARM, DRY WALLS

Furring with 2" x 2"'s accommodates insulation and wiring, forms cavity as moisture barrier.

Base flashing and weep holes keep cavity dry.

PROVIDES PREMIUM BEAUTY

This long low face shape enhances the horizontal lines of today's one-story homes.

MEETS CONSTRUCTION REQUIREMENTS OF FHA AND ALL NATIONAL BUILDING CODES FOR SINGLE-STORY RESIDENCES.

NEW FREE BOOKLET "HOW TO BUILD BRICK HOMES THAT SELL WITH THE SCR brick*" gives full construction details. To get one, just write us on your own letterhead. Address Dept. HH-7.

*Reg. TM, SCPRF, Patents Pending.

NEW FRONTIERS SCR FOR BRICK AND TILE *

The "SCR brick" is a new product developed by the Structural Clay Products Research Foundation.

SCPI STRUCTURAL CLAY PRODUCTS INSTITUTE

STRUCTURAL CLAY PRODUCTS INSTITUTE

1520 18TH STREET, N. W., WASHINGTON 6, D. C.

Silent Salesman for Your Homes

Chrysler Airtemp Comfort Zone

Residential Year-'Round Air Conditioner

HEATING • AIR CONDITIONING

Home buyers look for the plus features in a house—and year-'round Comfort Zone Air Conditioning is a most potent sales point. In your budget homes, install a Chrysler Airtemp Comfort Zone heating system, then the purchaser can later install a Chrysler Airtemp "Packaged" Air Conditioner for summer cooling. With Chrysler Airtemp year-'round equipment, you can offer this added attraction complete for less than 25c a day, when included in the mortgage. Remember, Chrysler Airtemp is the FIRST "Packaged" Air Conditioner with a Sealed Radial Compressor which carries a five-year warranty!

AIRTEMP DIVISION
OF CHRYSLER CORPORATION
DAYTON 1, OHIO

Airtemp Division, Chrysler Corporation
P. O. Box 1037, Dayton 1, Ohio H&H-7-52

Please send me details about Chrysler Airtemp residential heating and air conditioning.

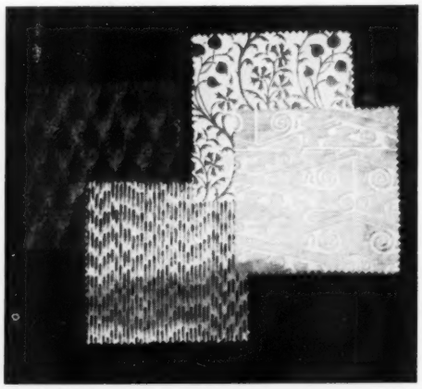
Name _____ Phone _____

Address _____ Zone ____ State _____

City _____

SEE THE YELLOW PAGES FOR THE NAME OF YOUR NEAREST DEALER

PRODUCT NEWS



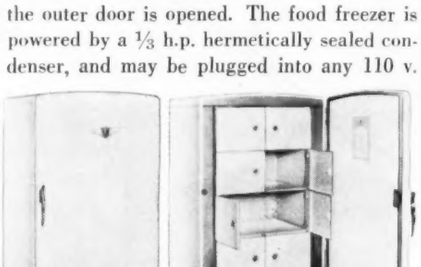
LUXURIOUS ITALIAN FABRICS for curtains printed by unique process

While doing restoration work on Titian paintings in the '20s, Spanish born Mariano Fortuny developed a technique for applying pigments which found its way onto silk gowns for Isadora Duncan, and more recently onto contemporary fabrics. In the Fortuny process, layer upon layer of pigment is applied to the material, producing a thick-bodied tempera quality. For many years only traditional patterns for European salons came off the Venetian plant's rollers. This year a new line of small scaled prints suitable for modern interiors has become available in this country. Prices range from about $8 to $16.50 per yd.

Distributor: Elsie McNeill, Inc., 509 Madison Ave., New York, N. Y.

STAND-UP FREEZER. Its food storage compartments are easy to reach

About 665 lbs. of food can be stacked away and conveniently inventoried in Ryan's new 19 cu. ft. *Freeze Pantry*. Occupying a floor area of only 31½" x 3', the upright unit has four separate storage sections, each with two inner doors which help retain the cold when the outer door is opened. The food freezer is powered by a ⅓ h.p. hermetically sealed condenser, and may be plugged into any 110 v.



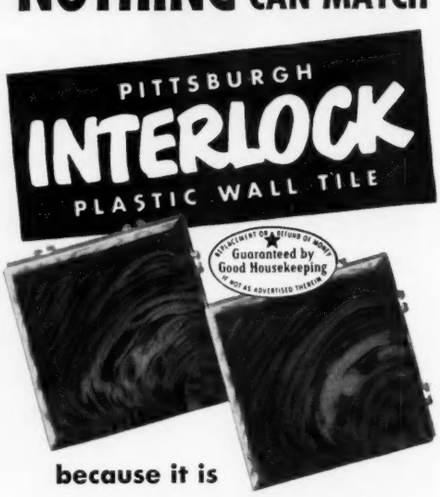
AC outlet. If for any reason the temperature inside the unit should rise, the owner is warned by an electronic alarm and signal light.

Fabricated of steel and insulated with glass fiber, the *Freeze Pantry* retails for $699.50. Sizeable discounts are accorded builders and architects for quantity orders.

Manufacturer: Ryan Industries, Refrigeration Div., 1025 Excelsior Ave., E., Hopkins, Minn.

(Technical Publications, page 178)

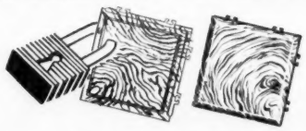
NOTHING CAN MATCH



because it is
the only Tile that actually
LOCKS on WALLS

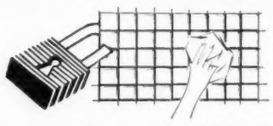
Pittsburgh Interlock is in a class by itself — in beauty, in adding *low-cost* luxury to bathroom or kitchen. And its exclusive, *patented* Interlock gives it *permanence* that can't be matched!

THE BEAUTY IS LOCKED-IN!



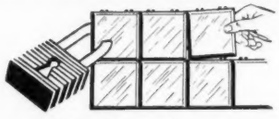
Beauty that endures! The lovely pastel colors go thru and thru—front to back.

THE DIRT IS LOCKED-OUT!



A dream to keep clean! No dirt-catching mortar lines. Just wipe with a cloth.

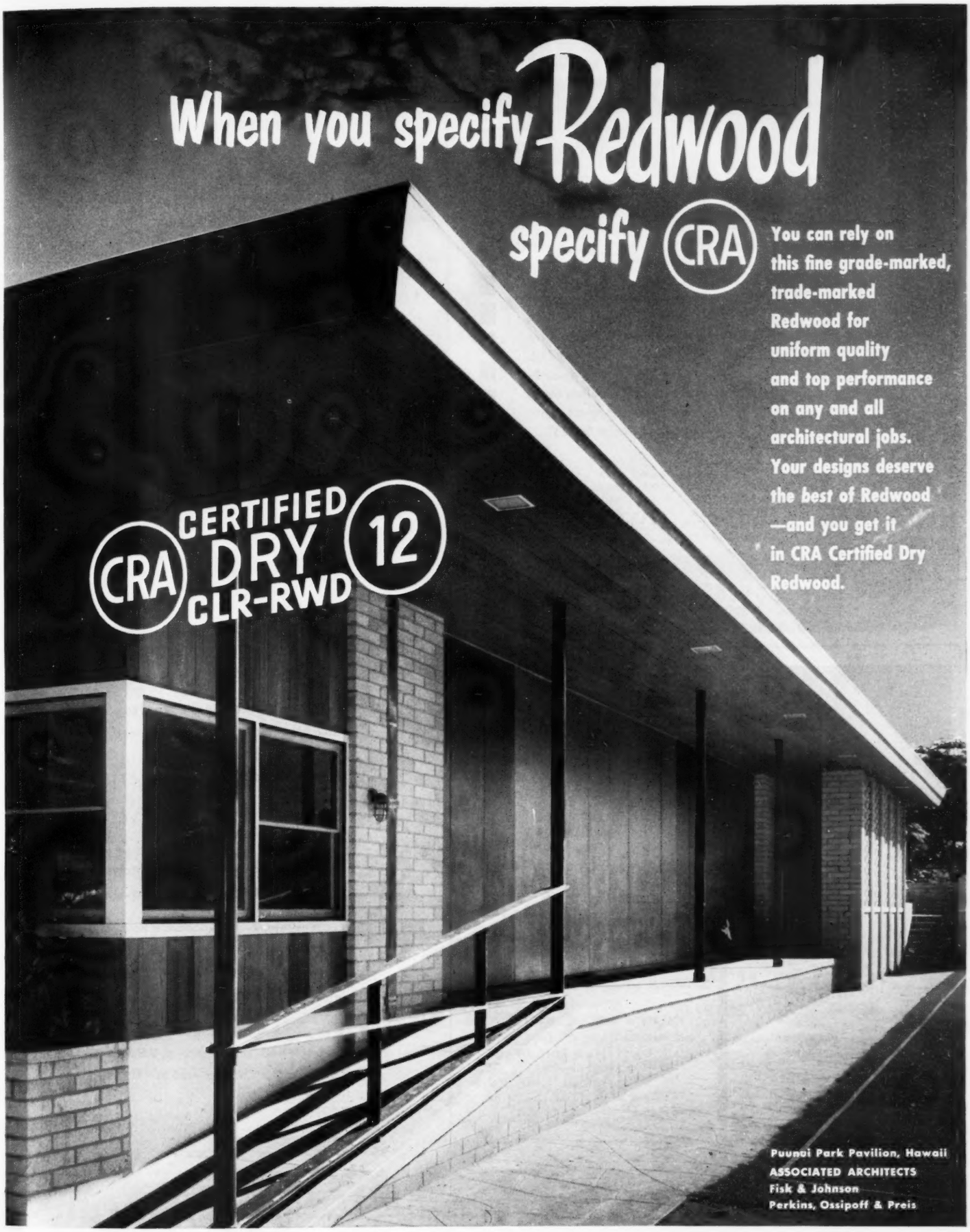
THE TILE IS LOCKED-ON!



No trouble! Exclusive, patented Interlock locks tiles to each other and to wall.

For homes, apartments, hotels, buildings and stores . . . write today for the full color book.

JONES & BROWN, INC.
National Distributors
439 Sixth Ave. • Pittsburgh 19, Pa.


When you specify Redwood
specify CRA
You can rely on this fine grade-marked, trade-marked Redwood for uniform quality and top performance on any and all architectural jobs. Your designs deserve the best of Redwood —and you get it in CRA Certified Dry Redwood.
CRA CERTIFIED DRY 12 CLR-RWD
Puunoi Park Pavilion, Hawaii
ASSOCIATED ARCHITECTS
Fisk & Johnson
Perkins, Ossipoff & Preis

CALIFORNIA REDWOOD ASSOCIATION CRA

Members: Warm Springs Redwood Co. • Northern Redwood Lumber Co. • Arcata Redwood Co. • Coastal Plywood & Timber Co. • Hammond Lumber Co. Holmes Eureka Lumber Co. • The Pacific Lumber Co. • Rockport Redwood Co. • Simpson Logging Co. • Union Lumber Co. • Willits Redwood Products Co.

WOODEN FENCES

WOVEN PICKET FENCE
Half-round saplings. 2 types. Woven Cleft with ¼" between pickets. Also special Close Type has pickets with sawed edges butted tight together; assuring absolute privacy. We also import French woven picket fences.

POST AND RAIL FENCE
A strong, beautiful, long-lasting all-purpose fence. Made of finest selected, hand-split chestnut-timber. Available in the 2, 3 or 4 rail types. As with all Rusticraft Fences, matching gates of many widths available.

ENGLISH HURDLE FENCE
Ideal for property lines. Gives protection from trespassing. Two heights 3 ft. and 3 ft. 8 in. Closely spaced lower rails protect shrubs, keep dogs off or within property. Shipped in 8 foot sections, ready to erect.

We make many types of wooden fences which are illustrated and shown in our booklet. Many architects specify Rusticraft wooden fences. We ship to all parts of the United States.

WRITE FOR BOOKLET

Manufacturers of.
IMPORTED FRENCH PICKET FENCES — WOVEN CEDAR PICKET FENCES — ENGLISH HURDLE FENCES — POST AND RAIL FENCES — "Won't-Sag" FARM GATES — SELF-LOCKING FIELD GATES — CHILDREN'S (OUTDOOR) PLAY-YARDS.

Rusticraft FENCE CO.
DAVID TENDLER • EST. 1918 • 7 KING RD. • MALVERN, PA.

Give to conquer Cancer

AMERICAN CANCER SOCIETY
GENTLEMEN:

☐ PLEASE SEND ME FREE LITERATURE ABOUT CANCER.

☐ ENCLOSED IS MY CONTRIBUTION OF $.....TO THE CANCER CRUSADE.

Name.....

Address.....

City.....State.....

American Cancer Society

7 out of 9 AIA award-winners
IN ARCHITECTURAL FORUM

Last month at the AIA Convention,
nine commercial and industrial buildings
won top awards, including:

Lever House — Skidmore, Owings & Merrill . . .
Architect's Office — Beckett
Insurance Building — Neutra
Eastgate Apartments — Brown, DeMars, Kennedy, Koch, Rapson . . .
. . . all already presented in ARCHITECTURAL FORUM

And Forum will soon present three more
of the award winners:
Cerebral Palsey School — Horn & Mortland
Resort Hotel — Young & Richardson, Carelton & Detlie . . .
Bus Shelter — Freret & Wolf . . .

. . . which helps explain why Forum
is the magazine where you see
the architect's **favorite** buildings **first.**

see the JULY ISSUE which brings you . . .

William Zeckendorf's Rooftop Office Suite
called the "most theatrically planned,
yet most thoughtfully detailed
executive office in America" . . .

Manhattan House New York's most talked-about
postwar apartment building . . .

Gaffney's Resort Hotel one of the
above-named AIA award-winners . . .

. . . plus reports on expandible hospitals,
a new low in apartment construction costs,
conservation of materials, new schools and many more
thought-provoking plans, studies and ideas.

Subscribe today — basic professional rate
for a one-year subscription to U.S.A.,
Possessions or Canada — $5.50

THE MAGAZINE OF BUILDING

architectural forum

540 North Michigan Avenue, Chicago 11, Ill.

THERE'S SALES APPEAL IN GPX SIDING

GPX plastic-faced plywood's unmatched features and cost-cutting advantages are dramatically illustrated by the Place Construction Company's use of GPX Exterior Paint Grade for lapped siding of enduring beauty.

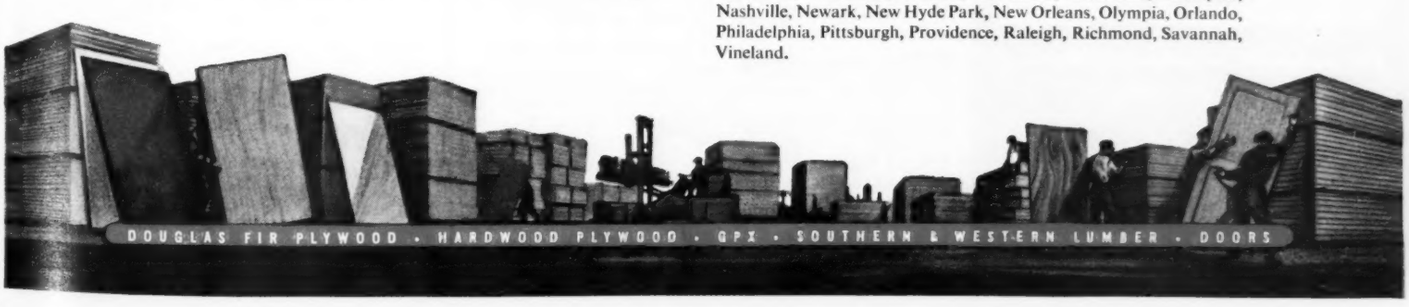
This leading Indiana builder cut large, lightweight panels of GPX into 12-in. strips. Labor costs and time are saved because GPX covers large areas quickly—will not check or crack. Painting costs are cut because there's no need for prime coats. GPX's dense, smooth surface takes finishing coats readily, extends the life of the paint over 50% (a strong point for prospective buyers!). There's added beauty, too, in the deep shadow lines provided by these ⅝-in. thick strips.

Year after year, GPX remains impervious to the effects of weather extremes, free from cracks or checking.

Available in four grades and five thicknesses, GPX offers a new degree of building versatility. If you have a construction problem, bring it to Georgia-Pacific's GPX technical staff. Call your G-P representative or write:

GEORGIA—PACIFIC
PLYWOOD COMPANY
605-7A North Capitol Way, Olympia, Wash.

OFFICES OR WAREHOUSES IN: Augusta, Birmingham, Boston, Chicago, Cleveland, Columbia, Detroit, Lancaster, Louisville, Memphis, Nashville, Newark, New Hyde Park, New Orleans, Olympia, Orlando, Philadelphia, Pittsburgh, Providence, Raleigh, Richmond, Savannah, Vineland.



PRECISION

the only attic stairway equipped with

ROLLER BEARINGS

Life time, factory packed **ROLLER BEARINGS** make raising and lowering stairway practically effortless.

Precision Parts Corporation, not content with the smoothest and easiest operating stairway on the market, equipped their Precision Folding Stairway with roller bearings for still smoother and easier operation. Actuated by counterweights which operate on these bearings the stairway is practically 100% free of friction and all but raises and lowers itself.

OTHER OUTSTANDING FEATURES

Constructed of No. 1 kiln dried poplar. Heavy cast aluminum alloy brackets, rocker arms and hinges. Composition safety treads on steps. Door panel insulated with Cellufoam. Requires no attic space. Accepted by F.H.A. everywhere.

For complete information write or wire us today.

Manufactured by

PRECISION PARTS CORPORATION
402 NORTH FIRST STREET
NASHVILLE 7, TENNESSEE

TECHNICAL PUBLICATIONS

WINDOWS. Aluminum Windows, Specifications 1952. Aluminum Window Manufacturers Association, 74 Trinity Place, New York 6, N.Y. 24 pp. 8½" x 11".

This year's standards for the Aluminum Window Manufacturers Association covers projected- and awning-type windows as well as double hung and casement units for residential and commercial application. The publication provides both short form and master specifications for use by architects and builders.

PLASTICS. Monotop Plastics Surfacing Shop Manual. Chemical Division, General Electric, Pittsfield, Mass. 16 pp. 5½" x 7½". CDL-59.

Step-by-step procedures for fabricating G-E's Textolite *Monotop* (Dec. '51 issue) are explained pictorially in this manual. The unique plastic surfacing for kitchen counters and bathroom vanity tops is molded in a single piece. There are no seams between the backsplash, top, and front edge. The instruction book tells how to miter corners on the *Monotop*, butt joints, and make cutouts for sinks. It also lists the tools needed.

FLOORING. How to Create Your Own Floor Designs, Design Book No. 1. Kentile, Inc., 58 Second Ave., Brooklyn 15, N.Y. 44 pp. 8¾" x 11".

A practical aid for architects and interior designers, the full color *How to Create Your Own Floor Designs* contains many ideas for tile floor patterns. It opens with a description of *Kentile*, a resilient asphalt floor surfacing available in 23 marbleized and three plain colors. It describes the tile's simple installation and maintenance, and indicates the quantities of each color needed for the illustrated patterns. The publication also suggests how to form original designs with the 9" squares and 1" stripping.

HEATING. Electrol, Finest in Oil Fired Equipment since 1918. Electrol Burner Manufacturing Co., Inc., 22 Union Ave., Rutherford, N.J. 8 pp. 12" x 10".

Electrol's complete line of oil fired equipment is covered concisely in this booklet. Specifications and dimensions are given for various types of oil burners, water heaters, warm air conditioners, and boilers.

AIR CIRCULATION. Murray Fan-Belt Driven & Window. The Murray Co. of Texas, Inc., Ventilating Fan Division, Atlanta, Ga., 16 pp. 8½" x 11".

Packed into a Manila folder are spec sheets, installation instruction folders, and price lists on Murray fans. Helpful information is included on the line's operating features.

To Subscribers

When you move, please tell us at the earliest possible moment so that you may continue to receive copies of ARCHITECTURAL FORUM without delay.

To expedite the change of address, send the old address as well as the new.

THE MAGAZINE OF BUILDING
architectural forum
edition

540 N. Michigan Avenue

Chicago 11, Illinois

Look what you can do to an old bathroom!

How Crane ideas on bathroom design fit into your home remodeling plans

The oldest bathroom can be made as attractive as if it were in the most modern house

It's no secret that bathrooms help set the style of a house.

New ideas, modern materials and equipment help you make your clients' bathrooms more attractive and convenient than anything they ever dreamed of.

There's almost no end to the possible ideas for new bathrooms . . . but Crane has illustrated twenty-three new bathroom concepts and put them—along with other practical ideas for kitchens and utility rooms—in the big Crane Sketchbook of Ideas.

The Sketchbook is a basic part of Crane's new service to architects who specialize in designing homes. It's written and illustrated to help you get client approval for your new ideas and room arrangements. And if you wish, we can give you suggestions on decorations and furnishings for any room in the book.

This service is available through your Crane Branch or Crane Wholesaler. Call them today.

COME TO **CRANE** FOR IDEAS

CRANE CO.

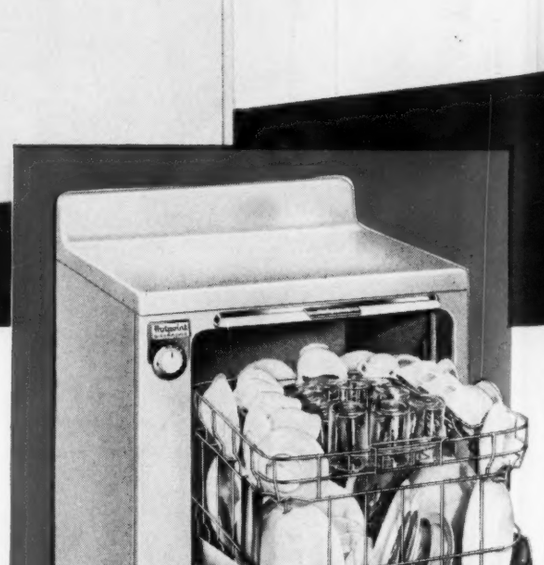
GENERAL OFFICES: 836 SOUTH MICHIGAN AVE., CHICAGO 5

VALVES • FITTINGS • PIPE

PLUMBING AND HEATING

Hotpoint WITH Automatic

ADD MORE VALUE AND SA



Of all the modern home conveniences in demand today, nothing equals the automatic dishwasher and garbage disposer for saving time and work. They head the list of electrical servants wanted most by most homemakers. Every modern woman visualizes an automatic dishwasher and garbage disposer in the home of her dreams. To be without them is to be old-fashioned. Installed either as single units or in combination, the Hotpoint Automatic Dishwasher and Disposall add greater salability and evidence of greater value in the homes you build . . . and with a minimum investment.

Write now . . . *for free literature on the Hotpoint Automatic Dishwasher and Disposall. Hotpoint will also give you helpful counsel in modern kitchen and home laundry planning for your particular project.*

RANGES • REFRIGERATORS • DISHWASHERS • DISPOSALLS® • WATER HEATERS • FOOD FREEZE

MINIMUM INVESTMENT

Dishwashers & Disposalls®

SALABILITY TO YOUR HOMES!

Hotpoint is the pioneer of all automatic dishwashers. The advanced engineering and performance record of the Hotpoint Automatic Dishwasher long ago gave it the distinguished leadership it so rightfully deserves. It is the classic by which others are compared. Hotpoint's exclusive features, resulting from long years of experience, are the features modern homemakers demand.

Today, no home is modern without a Hotpoint Disposall garbage disposer. As inevitably as modern plumbing presaged the passing of outside plumbing . . . so has it doomed the old-fashioned garbage can to the land of limbo. Hotpoint pioneered the Disposall and has brought it to its present high state of perfection. The Hotpoint Disposall is years ahead in operation, performance, features, and acceptance.

Hotpoint Co.

(A Division of General Electric Company)
5600 West Taylor Street, Chicago 44, Illinois

AUTOMATIC WASHERS • CLOTHES DRYERS • ROTARY IRONERS • CABINETS

ADVERTISERS INDEX

Airtemp Division (*Chrysler Corporation*) 174
American Houses, Inc. 27
American-Olean Tile Company 52
American Telephone & Telegraph Company 28
Andersen Corporation 134, 135
Arkansas Soft Pine Bureau 65
Armstrong Cork Company 36
Artcraft Ornamental Iron Co. 8
Asbestone Corporation 151
Auto-Lok Aluminum Awning Windows (*Ludman Corporation*) 138, 139
Avco Manufacturing Corporation (*Crosley Division*) 137
Avco Manufacturing Corporation (*Lycoming-Spencer Division*) 130

Bakelite Company, Division of Union Carbide and Carbon Corporation 147
Berns Mfg. Corporation 164
Bessler Disappearing Stairway Co., The 152
Blue Ridge Sales Division (*Libbey-Owens-Ford Glass Company*) 23
Bradley Lumber Company of Arkansas 165
Briggs Manufacturing Co. 52A
Brown-Graves Co. 127
Bruce, E. L., Co. 2
The Magazine of BUILDING 176, 178
Bundy Tubing Company 52B

California Redwood Association 175
Carey, Philip, Manufacturing Company 25
Carr, Adams & Collier Co. 4
Carrier Corporation 50, 51
Casement Hardware Company, The 66
Ceco Steel Products Corporation 12
Chase Brass & Copper Co. 59
Chrysler Corporation (*Airtemp Division*) 174
Columbus Coated Fabrics Corporation 172
Crane Co. 179
Crosley Division (*Avco Manufacturing Corporation*) 137
Curtis Companies, Incorporated 53

Delco Appliance Division (*General Motors Corp.*) 126
Detroit Steel Products Company 144
Douglas Fir Plywood Association 168, 169

Eljer Co. ..... Cover III
Emerson Electric Mfg. Co., The 64

Fiat Metal Manufacturing Company 54
Fleet of America, Inc. 58

Gate City Sash & Door Co. 164
General Electric Company 132, 133
General Electric Company (*Hotpoint Co., Division*) 180, 181
General Motors Corp. (*Delco Appliance Division*) 126
General Motors Corp. (*Rochester Products Division*) 17
General Portland Cement Co. (*Trinity Division*) 152
Georgia-Pacific Plywood Company 177
Given Mfg. Co. 146

Hotpoint Co. (*Division of General Electric Company*) 180, 181

Insulite Division (*Minnesota and Ontario Paper Co.*) 30, 31
International Molded Plastics, Inc. 158

Johns-Manville 20
Jones & Brown 174
Jones & Laughlin Steel Corporation 184

Kaustine Co., Inc. 159
Kelvinator Division (*Nash-Kelvinator Corp.*) 32
Kentile, Inc. 131
Kimble Glass Company (*Subsidiary of Owens-Illinois Glass Company*) 40
Kohler Company 22
Kwikset Locks, Inc. 1

Libbey-Owens-Ford Glass Company (*Blue Ridge Sales Division*) 23
LIFE Magazine 156, 157
Lightolier Company, Inc., The 26
Lindemann, A. J., & Hoverson Company 153
Litecraft Manufacturing Corporation 161
Louisville Cement Company, Inc. 171
Ludman Corporation (*Auto-Lok Aluminum Awning Windows*) 138, 139
Ludowici-Celadon Company 5
Lycoming-Spencer Division (*Avco Manufacturing Corporation*) 130

Mastic Tile Corporation of America 145
Miami Window Corp. 15
Minneapolis-Honeywell Regulator Company 10, 11
Minnesota and Ontario Paper Company (*Insulite Division*) 30, 31
Mosaic Tile Company, The 48, 49
Mueller, L. J., Furnace Company 150
Mueller Brass Company 9

Nash-Kelvinator Corp. (*Kelvinator Division*) 32
National Homes Corporation 155
National Oak Flooring Manufacturers' Association 163
New Castle Products 183
New York Wire Cloth Co. 160
Nichols Wire & Aluminum Company 148
Nova Sales Co. 160, 161
NuTone, Inc. ..... Cover II

Ohio Foundry & Manufacturing Co. 148
Overhead Door Corporation ..... Cover IV
Owens-Corning Fiberglas Corporation 136
Owens-Illinois Glass Company (*Kimble Glass Company, Subsidiary*) 40

Paine Lumber Co., Ltd. 167
Pease Woodwork Company 171
Ponderosa Pine Woodwork 63
Precision Parts Corp. 178
Pryne & Company, Inc. 149

Reflectal Corporation 162
Remington Arms Company, Inc. 42
Revere Copper and Brass, Inc. 14
Reynolds Metals Company 18, 19
Rheem Manufacturing Company 143
Robbins & Meyers, Inc., Fan Division 166
Rochester Products Division (*General Motors Corp.*) 17
Roddis Plywood Corp. 140
Rowe Manufacturing Company 125
Russell, F. C., Company, The 128, 129
Rusticraft Fence Co. 176

Schlage Lock Company 29
Stanley Works, The 16
Steelcraft Manufacturing Co., The 141
Stewart-Warner Corporation 60
Structural Clay Products Institute 173
Surface Combustion Corporation 38

Taco Heaters, Inc. 170
Thomason Plywood Corporation 172
Trinity Division (*General Portland Cement Co.*) 152
Trumbull Electric Mfg. Co. 24
Truscon Steel Company 6

Union Carbide and Carbon Corporation (*Bakelite Company, Division*) 147
United States Plywood Corporation 57
U. S. Sliding Door Corporation 55

Vento Steel Products Co., Inc. 62

Wallace, William, Company 154
Wasco Flashing Company 13
Waterman-Waterbury, Co., The 161
Wesix Electric Heater Company 152
Westinghouse Electric Corporation 7
Woodall Industries, Inc. 142
Wright Manufacturing Company 56

Zegers, Incorporated 8

How to Build A Third Bedroom into A Two-Bedroom House

There's really nothing to it when you use "Modernfold" doors as *movable walls.* When you want to add length to your living room . . . fold "Modernfold" doors out of the way against the wall.

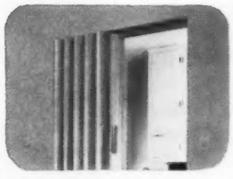
And when you want a private sitting room . . . another bedroom or guest room . . . just close the "Modernfold" door. This "Modernfold" freedom to control the size and number of rooms has been used to good advantage by builders all over the country.

Your ideas come to life . . . for life with "MODERNFOLD" doors

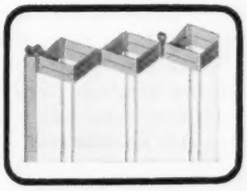
For every room division or door closure problem, there's a simple, economical, space-saving solution. That's "Modernfold," the original folding door.

Specifying "Modernfold" doors keeps clients happy. For these steel-framed, vinyl-covered doors can't be equaled *anywhere* for quality of design . . . for quality and strength of materials.

And because this line is *complete,* you're sure to save time and get exactly what you want when you specify better looking, easier operating, longer lasting "Modernfold" doors.



Better Looking
Fabric covering conceals all operating mechanism. No cornice needed. Adjustable trolleys keep doors hanging flush to jamb.



Longer Lasting
Balanced hinge construction both top and bottom. Trolleys attached at hinge intersections. No sidewise twist or pull possible.

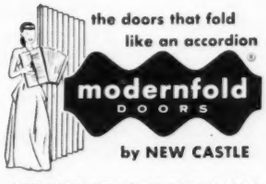
Better Background
Over 100,000 "Modernfold" doors now in operation—a backlog of space engineering experience that's your guarantee of satisfaction.

YOU CAN'T GET MORE IN A FOLDING DOOR

Sold and Serviced Nationally

NEW CASTLE PRODUCTS, NEW CASTLE, INDIANA

In Canada:
Modernfold Doors, 1315 Greene Avenue, Montreal



COPYRIGHTED NEW CASTLE PRODUCTS 1952

New Castle Products
Box No. 863
New Castle, Indiana
Please send full details on "Modernfold" doors.

Name.....

Address.....

City.....*County*.....*State*.....

HOW J & L JUNIOR BEAMS SAVE TIME, SOLVE DESIGN PROBLEM AT LOW COST IN

ST. CHARLES SCHOOL

YOUNGSTOWN, OHIO

Architect P. Arthur D'Orazio and George J. Murphy Company, contractors-engineers, of Youngstown, Ohio, have employed lightweight J&L Junior Beams as cantilevered roof purlins at the Boardman Center's ultra-modern St. Charles School near Youngstown. J. A. McMahon, Ltd., Niles, Ohio, fabricated the 85 tons of structural steel and 35 tons of Junior Beam joists going into the framework.

Notched over lintel beams and cantilevered four feet beyond the outside walls, J&L Junior Beams support not only the roof but also an attractive permanent sun shield over classroom window walls.

Because of their versatility and adaptability, J&L Junior Beams go far towards meeting the demands of today's builders. They cost less to buy and less to erect. Lightweight, 12″ Junior Beams, 11.8 lbs. per foot, 30 ft. long, may be easily raised, placed and bolted directly into position by three men with the aid of only a hand-operated winch.

The lightweight and consequent ease with which Junior Beams can be handled led to fast, economical construction that helped hold building costs to a minimum. ALL STRUCTURAL STEEL INCLUDING THE JUNIOR BEAM ROOF PURLINS WAS ERECTED BY 6 MEN IN 2 DAYS.

ARCHITECTS — CONTRACTORS

If you're engaged in the design, or construction of light occupancy buildings, you'll be interested in these features offered by J&L Junior Beams. EASY TO INSTALL, RIGID, VIBRATION RESISTANT, SHRINK PROOF, LOWEST DEFLECTION FACTOR OF ANY STRUCTURAL SECTION OF EQUIVALENT WEIGHT.

Why not write today for our new booklet: "Skyscraper Construction for Every Building"? It shows how Junior Beams are used as floor joists, and roof purlins with loading and spacing tables for various spans.

JONES & LAUGHLIN STEEL CORPORATION

PITTSBURGH 30, PA.

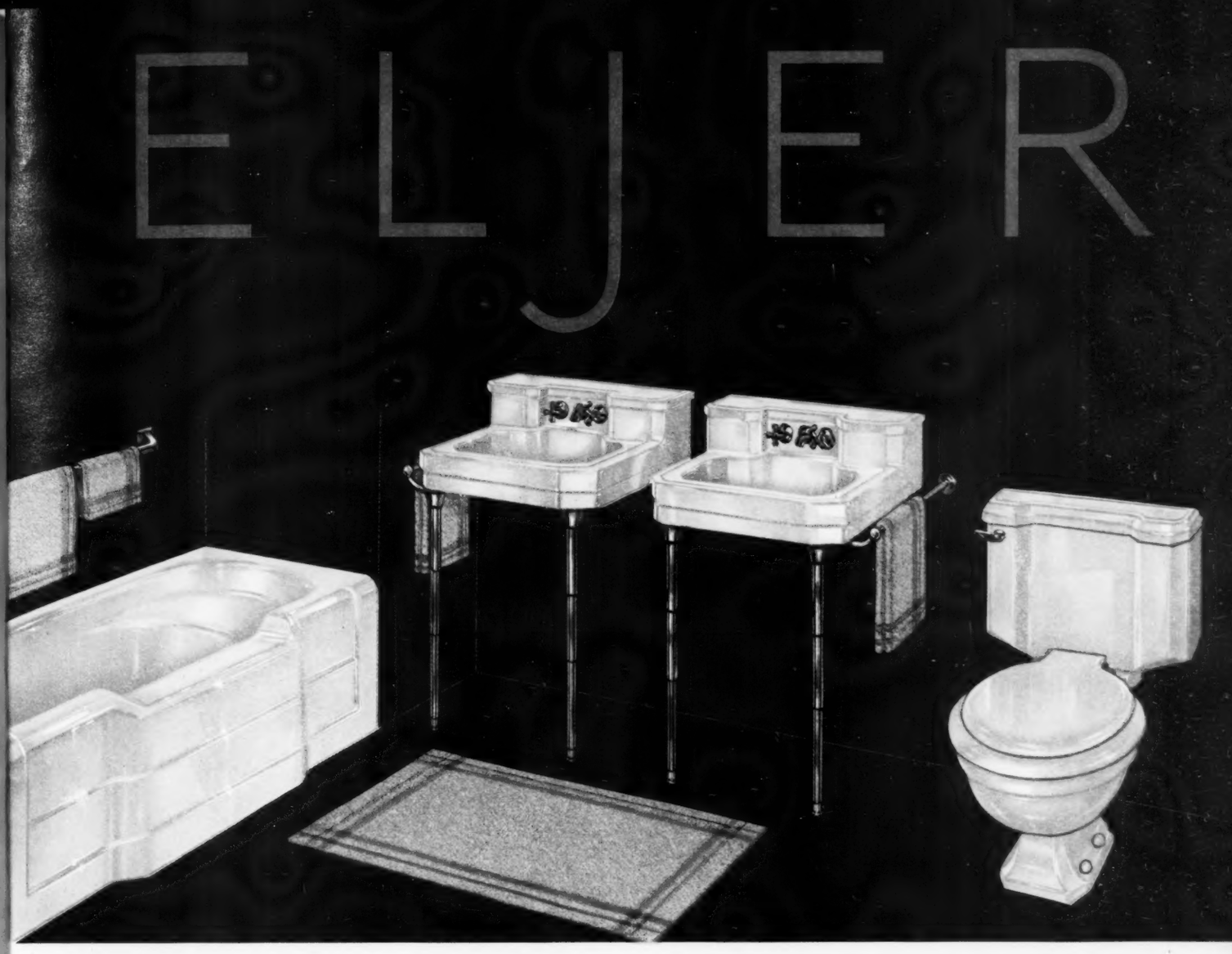
Jones & Laughlin Steel Corporation
401 Gateway Center Building No. 3
Pittsburgh 30, Pa.

Please send me a copy of the booklet entitled, "Skyscraper Construction for Every Building."

Name_____

Company_____

Address_____



Builders...

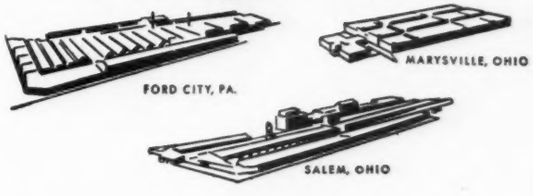
BATHROOM FIXTURES ARE OFTEN A BUYER'S YARDSTICK

Every day it is becoming more common for home buyers . . . and loan appraisers, too . . . to judge the construction details of an entire house by the quality of the plumbing fixtures used. Why shouldn't this be so? Actually, the *extra features* of Eljer Fixtures, particularly in color, give the house extra value and make it worth far more than the small extra cost added to monthly mortgage payments.

Here are Eljer features that help sell homes faster. **The Legation Bath:** low front rim, 6 inches wide and only 16 inches high . . . roomy, integral end-seat . . . rugged, rigid *cast iron* base . . . thick, lustrous enamel finish. **The Martha Washington Lavatory:** genuine vitreous china . . . concealed overflow under front anti-splash rim. **The Sylenta Closet Combination:** integral china overflow and ground-in valve seat, eliminating metal parts that corrode and require replacement. Give your buyers a *yardstick* with which to buy. Recommend the *finest quality*, in white or lovely pastel colors. *Offer them Eljer.*

Quality THROUGH AND THROUGH

ELJER



For more information on Eljer Fixtures, see Sweet's Architectural File, Sweet's File for Builders, or write Eljer Co., Ford City, Penna.

THE "OVERHEAD DOOR"

TRADE MARK

Only OVERHEAD DOOR CORPORATION and its manufacturing divisions make THE "OVERHEAD DOOR" TRADE MARK

COPYRIGHT, 1958, OVERHEAD DOOR CORPORATION

MIRACLE WEDGE*

SALT SPRAY STEEL*

* TRADE MARK

OVERHEAD DOOR CORPORATION

HARTFORD CITY, INDIANA, U. S. A.

MANUFACTURING DIVISIONS

HILLSIDE, NEW JERSEY	CORTLAND, NEW YORK	DALLAS, TEXAS	PORTLAND, OREGON
NASHUA, NEW HAMPSHIRE	LEWISTOWN, PENNSYLVANIA	OKLAHOMA CITY, OKLAHOMA	GLENDALE, CALIFORNIA